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Established upon the principle of Mutual Life Assurance, the whole of the profits being divisible amongst the assured.

ALL LIFE POLICIES INDISPUTABLE, AND GRANTED FREE OF STAMP DUTY TO THE ASSURED.

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The life branch of this society is established by persons connected with that large and influential body of individuals—the mining interests of England and Wales—a class of upwards of 2,000,000, and whose annual returns of capital approximate to £40,000,000 sterling. As life assurance has been extended, the various classes of the community have embraced the advantages of establishments of their own, adapted to the peculiar circumstances of those portions of society with which they are respectively connected.

It is, however, remarkable that while in the metropolis alone the life assurance companies of all classes and descriptions exceed 100 in number, with engagements computed at upwards of £115,000,000 sterling, those companies do not comprise one emanating from the mining classes, or embracing those interests which have done more than any other to develop the resources, and promote the extension, of the commerce of the country. So long, then, as this important and influential class of the community possesses no assurance association, immediately identified with its peculiar interests, it is manifest that an extensive system of life assurance remains yet to be accomplished.

The individuals directly interested in, and connected with, mining property in this kingdom, are more numerous and not less wealthy than the members of the clerical, medical, and legal professions, nor represented by not fewer than nine assurance companies; and it is calculated that the proprietors, agents, and those immediately or indirectly interested, represent an amount of population, and of fixed property, nearly equal to that of all the other classes of the kingdom having representative assurance institutions.

This extensive and wealthy interest is, therefore, unquestionably adequate to sustain a prosperous assurance society, adapted to the wants and necessities of the life branch of the numerous individuals of which it is composed; and for this purpose the life branch of

"THE SEA, FIRE, LIFE ASSURANCE SOCIETY"

has been established, not only for the immediate benefit of these interests, but for those of all other classes, whether in the medical, legal, or clerical professions, the army, navy, or any other station of life, on equal terms, and will afford the utmost advantage that can be derived from life assurance.

Mutual assurance is the best mode by which this object can be attained; it is distinguished from the proprietary principle in distributing the surplus profit ratably and equally among the assured only; whilst in proprietary companies the shareholders are a permanent body, among whom a considerable portion of the profit is divided.

The experience of nearly a century has demonstrated that mutual societies are not only perfectly safe, but, when prudently managed, yield large profits to policy holders, without the aid of a permanent established capital.

Mr. de Morgan, one of the most competent authorities on life assurance, says:—"A mutual society is one in which the members stand equally related to each other, and constitute the company themselves. In such a company no capital is, generally speaking, raised at the outset, except, perhaps, a small sum for necessary expenses at starting." And again: "They have no capital except what arises from their own accumulations, and each member is a guarantee to the rest for the fulfilment of all engagements. The risk, however, even at the commencement, is not great in character, and is small in amount; and the quantity of risk distributed is much faster than the amount increases, so that it may be safely said there is nothing in the commercial world approaching, even remotely, to the security of a well established and prudently managed mutual assurance society."

As, however, there may be a portion of the public not yet fully convinced of the complete security afforded by purely mutual life companies, the life assurance department of this society has been formed upon a plan which unites all the advantages of a purely mutual with the security of a proprietary company, giving to the assured ALL THE BENEFITS OF THE FUND, AND THE ADVANTAGE OF AN AMPLIFIED PAID UP CAPITAL, AS A GUARANTEE FUND, to secure the prompt payment of any policies which may become early claims on the society.

ALL LIFE POLICIES INDISPUTABLE.

The chief obstacle to the progress of life assurance is, that an error in a policy, which may have arisen from mistake, misapprehension, or unintentional neglect on the part of the assured, or of the office, has the effect of nullifying the policy.

One of the most important objects of this society is the removal of the risks which have hitherto attended the rights of policy holders by insuring the certain payment of every life policy as it becomes a claim.

All questions as to age, health, habits, employment, residence, health of relatives, and other matters deserving of inquiry prior to the contract being granted, are held as finally settled when the assured receives his policy.

Every policy issued by the life department of this society will be absolutely indisputable; and the fact of issuing the same shall be conclusive evidence of the validity of the policy, and the amount assured will be paid within three calendar months after proof of the death of the assured; and a clause has been inserted in the policy deed prohibiting the society from disputing any life policy which shall have been granted—a condition which renders the policies of this society more than ordinarily valuable as family provisions, or as negotiable instruments of security in pecuniary or loan transactions.

THE CONSTITUTION OF THE SOCIETY.

The society is established by Act of Parliament. The funds of the society are vested in trustees. The affairs of the society are managed by a board of directors elected by the shareholders. The accounts of the society are audited annually, by not less than two auditors. A general meeting of the members will be held annually, to receive the report on the affairs of the society.

The whole of the profits are divided amongst the assured. At the end of December, 1853, being five years—and afterwards annually—the assets of the life assurance department will be computed, the profits ascertained and apportioned, and a sufficient sum reserved to meet all the contingencies of succeeding years; the whole of the profits will be divided ratably among the members assured for the whole term of life, after payment of the second premium, which will entitle them to participate in proportion to the amount and number of the premiums paid, and such sum either to be added to the policy, or be applied in reduction of the premium, or the value paid to the assured.

THE BUSINESS OF THE LIFE DEPARTMENT

Assurances on single lives, on joint lives, and on survivorships. Lives not considered perfectly admissible on the ordinary terms assured at rates of premiums corresponding with the extra risk. Assurances on the lives of persons about to proceed to foreign climates. Separate tables framed for those who do not desire to participate in the profits. Annuities for lives and limited terms, immediate and on survivorship. Deferred annuities to commence at specified ages. Tables to secure a deferred annuity of £40 and upwards during life. Endowments of every description to be granted. Premiums payable by annual, half-yearly, or quarterly payments; or by a single payment; or by payments for a certain number of years, or by an increasing or decreasing scale of premiums.

One-half of the premiums may remain unpaid at simple interest for the first 7 years, and may be then paid off, or remain a debt upon the policy, at the option of the assured. And all other sound and practicable provisions contingent on human life, and for terms certain.

RESIDENCE.—The assured will be allowed to reside in any part of Europe, in Australia, New Zealand, Canada, Cape of Good Hope, Madeira, and in any part of the world distant more than 35 degrees from the Equator.

Whole world policies are granted to persons assuring on the lives of others on payment of an extra premium.

INTEREST IN POLICIES.—A party having had an interest in the life assured shall not

lose the benefit of the policy, although his interest shall have terminated before the death of the assured.

RENEWAL OF POLICIES.—If an assured be unable to pay the premiums, he will be allowed, on giving due notice, to charge the amount thereof upon his policy, to the extent of its value, thereby preserving the assurance during the period of difficulty, and so preventing the sacrifice of the provision he had made for his family. This feature is peculiar to this office, and affords a most important advantage to policy holders, by thus avoiding the forfeiture of a valuable policy.

Death by duelling or suicide will not invalidate the policies of this society, unless they be the property of the deceased at the time of his death, in which case the society will repay to his representatives all the premiums which shall have been received.

ALL POLICIES INDISPUTABLE AND ISSUED FREE OF STAMP DUTY TO THE ASSURED.—This society, considering the charge for policy stamps as a tax upon prudence, and a great impediment to the full development of life assurance, have determined to relieve assureds at once of this burden, and charge it as a working expense upon the office.—No admission nor entrance fees are required, nor is any charge made for the policy.

Medical practitioners paid by the office for every case referred to them for their professional opinion.

GUARANTEE DEPARTMENT.

This society embraces the business of public guarantee, united with assurance on life, for the fidelity of persons in situations of confidence and trust, and providing against losses arising through dishonesty or failure, to account in lieu of the uncertain protection afforded by the system of private guarantee.

The principle of public guarantee has proved, from experience, so successful in its application to the employers so guaranteed, and the employed so assured, that the Lord Commissioners of her Majesty's Treasury have, by a special minute, empowered the heads of the Government department to receive the guarantee of a public company for those appointed to office of trust and responsibility under the Crown.

The directors, in order to provide against the numerous cases of hardship and constant uncertainty to which private bondsmen are exposed, have prepared tables expressly for this company, to grant policies for fidelity of trust, combined with policies of assurance on life, deferred annuities, and endowments to persons of approved character, about to be appointed to, or holding situations in, Government offices, banks, mercantile houses, public institutions, railway, insurance companies, and all other situations, where security against fraud or failure to account is required.

The value of this union of the two principles, combined with life assurance, the surety policy held out to him, who with moral integrity unites the possession of an eligible life, the solid advantages of the per centage he is annually paying being no longer an uncertainty, although an unavoidable tax upon his earnings, all benefit from which expires with the tenure of his present employment, and ceases with his life. But, on the contrary, the union of life assurance with guarantee secures to his family in the latter case, and to himself, on the cessation of occupation arising from any cause not produced by want of honesty on his own part, a full, direct, and immediate participation in the profits of the office, to the property of which the premiums paid on his own policy have contributed by the system of the directors.

Prospectuses, and every further information, may be obtained from the actuary, at the office of the society, No. 31, Cornhill, London; or at the offices of the agents to the society.—Local agencies will be formed in Wales, Cornwall, and in the principal towns of the United Kingdom.

Persons desirous of being appointed agents, are requested to apply personally, or by letter, to the managing director,

AUG. COLLINGRIDGE.

MAGNETIC BORING MACHINE.—In the *Franklin American Journal* a plan is suggested for a magnetic boring machine, to supersede the rod borer, or the Chinese method, with weight, chisel, and rope, by Mr. John Thompson. It is stated that the small space through which the magnetic principle can exert its powers renders it peculiarly adapted for boring purposes, either perpendicularly, horizontally, or at any angle, having a great advantage over the other methods, and applicable to direct mining. The author of the paper proposes to adopt a short boring instrument, having a common magnet inserted into it, with the poles uppermost. A fellow-magnet to this has a heavy weight attached to it, which being put face to face, connected with a galvanic battery, and reversing the polarity continually, a power will be exerted between the two magnets, tending at each alternate reversal of polarity to separate them, and produce a shock. Suppose the battery to reverse its polarity 10 times in a second, and the magnets only to separate the 100th part of an inch, he calculates the progress at 3 ft. per hour. The power he does not calculate on the attractive principle of the magnets, but in their repulsive energy. The weight being greater than the sustaining power, the boring machinery must sink while the battery on surface is in operation; the wires, however, deep the workings may be, are kept connected with it, and the points of the cutters protected by a simple sheath. The magnets descending with the chisels carry with them the same amount of energy as when at the surface; and as the sustaining power of the magnet may be increased very much above the example instanced, a powerful agent is here presented to the mining interests. Regarding lateral boring, it is only necessary to use pressure on the magnets instead of the heavy weights, and the mode in which it will be applied depends on the nature of the work to be executed. From the friable nature of coal, he suggests whether it might not be introduced with advantage as an auxiliary to the men, in the nature of a pioneer, cutting always in advance of the workmen, leaving them to pull down what it had bored and undermined.

URWIN'S STEAM-ENGINE IMPROVEMENTS.—We noticed, in the *Mining Journal* of last week, Mr. Urwin's new mode of suddenly getting rid of the steam from the exhaust side of the piston, stating that we should also notice his plan for returning the steam to the boiler. This consists of a cistern connected with the chest which receives the used steam, containing water, a portion of which, on the admission of high-pressure steam, is converted into vapour, making up for any leakage or waste; from thence it passes over a bent tube into another chamber surrounded with a running stream of cold water, by which it is effectually condensed, and pumped into the boiler perfectly pure, and having a considerable degree of heat. By this plan, the patentee says he reduces the consumption of fuel, obviates the rapid wear of tubular boilers arising from the use of salt water, and prevents all deposit and incrustation.

PREPARATION OF CHARCOAL BY HIGHLY-HEATED STEAM.—M. Violette, whose valuable experiments on the steam preparation of wood were noticed by us in a former number, has succeeded in applying his plan to the manufacture of charcoal; and the results of his trial show, not only an increase in the strength of the gunpowder made from the charcoal, but also some increase in the yield of the substance. He has also ascertained, that at 392° Fahr., wood is not charred; that at 482° an imperfect kind of charcoal, termed *brulots*, is obtained; and that at 572° the brown charcoal is formed; whilst a heat of 662° gives the black charcoal. Two other French engineers, Messrs. Thomas and Laurent, having hit upon the plan of reviving animal black by means of surcharged steam, M. Violette was induced to attempt its use in carbonization; and, after the primary trials, which gave promise of value, the Minister of War advanced 5000 francs for the carrying out of the invention. In the apparatus employed, the steam was supplied by an ordinary boiler, and is passed off through a helical worm, 8 inches in diameter, and 60 feet long, set in a furnace, which thus raises the steam temperature to 572° Fahr. for brown charcoal. It surrounds and penetrates into a cylinder containing the wood, which it chars, leaving the receiver charged with the products of distillation. This arrangement has been in active operation at the gunpowder mills of Esquerdes for a year back, supplying all the charcoal required there. The yield of brown charcoal is found to be from 33 to 37 per cent. of the wood, against 18 per cent. of the brown, or 14 per cent. of black charcoal, by the old process. M. Violette states, that bread-baking may be most successfully accomplished by using steam at 392°, as well as the cooking of meat, the extraction of pyrolytic acid, and pyroxylic spirit.—*Glasgow Mechanics' Journal*.

LEGALITY OF FINES IN FACTORIES.—At the Handsforth Sessions, on Saturday last, before J. E. Piercy, W. Mathews, and J. Bagnall, Esqrs., G. Overton, and 14 other puddlers, in the employ of Messrs. J. Bagnall and Sons, summoned their employers for wages, alleged to have been due—the real question, however, being the legality of manufacturers to make and enforce a code of laws for the regulation of the men. It appeared that at the Messrs. Bagnall's Toll End Iron-works it is the custom, in the absence of Mr. S. Talbot, the manager, for the watchman, James Hill, to examine and decide upon the quality of the workmen's iron, and that about a fortnight since he rejected the ball of a puddler, named Marshall, as being too cold, and requiring re-heating. Marshall refused, on the ground that it was in a proper state, and left the works. The others followed the example, and left the night's work unfinished, in consequence of which a fine of 1l. was inflicted, according to the rules. Mr. Edmonds, of Birmingham, contended that Messrs. Bagnall had no right to levy fines, and thus take the law into their own hands. "If men misbehaved, the magistrates were the parties to settle

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

TUESDAY.....Barrow Range Mining Company—offices, at Twelve.
 Australian Trust Company—offices, at Twelve.
 Buxton and Leake Railway—London Tavern, at One.
 Brighton and Continental Steam-Facility Company—offices, at Twelve.
WEDNESDAY.....Australian Mining Company—offices, at Twelve.
 Asturian Mining Company—offices, at One.
 Holyford Mining Company—offices, at Twelve.
 North Wales Railway—Guildhall Coffee-house, at One.
 London and Greenwich Railway—offices, at One.
 Cameron's Coalbrook Steam Coal and Swansea and Loughor Railway—offices, at One.
 Westminster and Marybone Patent Rammer Co.—offices, at One.
THURSDAY.....Balance Mining Company—offices, at One.
 Oxford, Worcester, and Wolverhampton Railway—London Tavern, Two.
 Southampton Docks Company—offices, at One.
 Etolian and General Life Assurance Endowment Society—offices, Two.
FRIDAY.....Llynvi Iron Company—offices, at Twelve.
 Argona Iron and Coal Company—offices, at One.
 Van Diemen's Land Company—offices, at One.
 Newry and Enniskillen Railway—Guildhall Coffee-house, at One.
 Reading, Guildford, and Reigate Railway—offices, at Twelve.
 Chelsea Water-Works Company—offices, at One.
 Electric Telegraph Company—offices, at Two.
 Newry, Warrenpoint, and Kestrevor Railway—offices, at One.
 Waterford, Wicklow, and Dublin Railway—offices, at One.
 Bank and Waterford Railway—offices, at Two.
 Droitwich Patent Salt Company—King's Head, Poultry, at Two.

[The meetings of Mining Companies are inserted among the Mining Intelligence.]

COMMERCIAL BANK OF LONDON.

The annual meeting of this company was held at the establishment, in Lothbury, on Tuesday, the 24th inst., to receive the report of the directors, and on other business. **THOMAS BARNWELL, Esq.**, in the chair.

The **CHAIRMAN** said: In taking the chair on the present occasion, and before proceeding to the immediate business of the day, I feel it my duty—and a mournful one it is—to express the deep regret of myself, as well as of my brother directors, and in which regret I am sure you will sincerely participate, at the melancholy loss we have incurred by the demise of our late respected chairman, who has been so many years connected with us, and who, not only in his private relations, but in his commercial walks of life, was so much respected. (Hear, hear.) Since he has been connected with us, I may say that his only object has been to promote the interest and prosperity of the Commercial Bank of London. He stood by its cradle and watched over its infancy; he devoted every energy of his mind to hasten its growth to maturity—indeed, to promote the interest of the Commercial Bank of London was the great object of his life. (Hear, hear.) For the attainment of this object, your late respected chairman brought such qualities to bear as are rarely to be met with, and which with difficulty could be equalled. The result of his valuable aid was, that this bank was now established on a solid basis, and it remained the duty of the directors, if they wished to maintain its prosperity, to follow his example. (Hear, hear.) After rendering this imperfect tribute to the memory of your late chairman, John Taylor, Esq., I shall leave the painful subject, and proceed to the business of the day, by requesting Mr. Cutbill to read the annual report on the state of the bank, which I hope you will all receive with great satisfaction. (Applause.)

Mr. A. R. CUTBILL, the general manager, then read the following report and balance-sheet:—
 The directors have again much satisfaction in meeting the proprietors, and in presenting to them their ninth annual statement of the affairs of the bank. It will be seen by the annexed balance-sheet, that after writing off the bad and doubtful debts, and paying the charges and current expenses of the year, the net profits amount to 12,077. 16s. 1d. Out of these profits a dividend at the rate of 6 per cent. per annum, for the half-year ending 31st December, 1848, has been already paid; and the directors have now to declare a dividend for the half-year ending 30th June, 1849, at the same rate, and, as hitherto, free from income tax. After paying this dividend, and deducting the rebate of interest upon current bills, there will remain a balance of 2596. 17s. 1d. to be added to the reserve fund, increasing that fund to 20,014. 19s. 9d. In compliance with the provisions of the Deed of Settlement, the following directors—viz.: William Baresford, M.P., John Alfred Chowne, John Savage, and Joseph Thompson, Esqs., retire from office, but, being eligible, offer themselves as candidates for re-election.

Commercial Bank of London—Balance Sheet, 30th June.

Capital subscribed	£241,400	
Capital paid up	£128,280	0 0
Guarantee fund, invested in 3 per Cent. Reduced Stock	17,418	3 8
Balance due to the customers of the bank	541,804	3 5
Balance carried down, deducting bad and doubtful debts, and paying all charges and current expenses	12,077	16 1
Total	£699,980	2 0
Cash in hand, Government securities, bills discounted, &c.	£695,580	2 0
Value of banking premises, fittings and furniture	4,000	0 0
Total	£699,980	2 2

* Dividend at the rate 6 per cent. per annum, for half-year ending 31st Dec. 1848, already paid £3848 | 8 0 || Dividend at 6 per cent. for half-year ending 30th June, 1849 | 3848 | 8 0 |
| Rebate of interest on current bills | 1784 | 3 0 |
| Balance carried to guar. fund (making 20,014. 19s. 9d.) | 2596 | 17 1 |
| **Total** | £12,077 | 16 1 |

Mr. MARRIOTT said, that after the excellent sentiments just expressed by the chairman, and the reading of that report, a copy of which was in every gentleman's hand, he thought it was only necessary for him to express the great gratification the proprietors felt at its contents. He would, therefore, move that the report just read be received, printed, and circulated amongst the shareholders.—Mr. HUNTER seconded the motion, which was passed unanimously.

The **CHAIRMAN** said, it devolved on him, after the very handsome manner in which they had just received this report, to express the thanks of the directors for such a mark of their approbation, and their hope that a similar mark of confidence would be merited by them in each successive year, when they should meet the proprietors. (Hear, hear.)

A dividend for the half-year, after the rate of 6 per cent. per annum on the capital stock of the company, free of income tax, payable on the 1st of August next, was then passed unanimously.

Mr. VENN moved that W. Baresford, Esq., M.P., J. A. Chowne, Esq., John Savage, Esq., and J. Thompson, Esq., be re-elected directors.

Mr. GEE seconded the motion, which was passed unanimously.

W. Baresford, Esq., M.P., returned thanks for himself and colleagues.

Mr. OXFORD (a director), in returning thanks on behalf of Mr. Chowne, begged to state that gentleman's deep regret at not being present at the meeting, which pleasure he had been deprived of by business of a very important character, which had called him to Scotland.

Mr. — was sure every one would accord with him in a vote of thanks to their worthy secretary and manager, Mr. Cutbill, for the talent, exertions, and devotedness which he had brought forward at all times for the benefit of this concern, and for the admirable and courteous manner in which he had discharged his duties. (Applause.)—Mr. — seconded the motion.

The **CHAIRMAN** said, it was hardly necessary for him to tell them to hold up their hands to such a resolution. He had many opportunities of witnessing the energy, care, and talent displayed by the manager in watching over the interests of this establishment. It was impossible for him to put this resolution to the meeting, without at the same time expressing the high satisfaction it gave to the board of directors. (Applause.) The resolution was passed unanimously.

Mr. CUTBILL (the manager) said, it was satisfactory for him to see that the exertions he had made in behalf of the bank were so highly esteemed; and he begged to say that such a testimonial would be a great inducement for him to continue those exertions. (Applause.)

Mr. BLEADON then moved a vote of thanks to the chairman and directors, for the zeal and ability they had displayed in the management of the bank for the past year. (Hear, hear.) The resolution was passed unanimously.

The **CHAIRMAN** returned thanks, and the meeting broke up.

ALFRED LIFE ASSURANCE COMPANY.

The annual meeting of this company was held at their offices, Lothbury, on Wednesday, the 25th inst.—Sir DAVID SCOTT, Bart., the chairman of the board of directors, presiding.

Mr. HAMPTON (the secretary) having read the advertisement convening the meeting, the **CHAIRMAN** said it was usual, at the meetings of the proprietors, to introduce the report which the directors had to submit to them, with some few remarks; but he believed the report itself, and the accounts, would be found so clear and satisfactory, that it would be necessary for him to detain them, with one or two observations only. The proprietors would find, upon reference to the report, that they had not been able to keep up the average number of their policies, and however this was to be regretted, still it was no matter of surprise to those who reflected upon the general commercial stagnation of the past year. He would not detain them by any unnecessary repetition of detail, because the report would be found amply to supply all these particulars. He would take that opportunity of mentioning that it would be in the recollection of gentlemen present, that some of the proprietors requested, at their last meeting, that they should be furnished with extracts of a few special clauses from the Deed of Settlement of the company. Those extracts had been made, and were ready to be furnished to the proprietors. He would now call upon the secretary to read the report.

The **SECRETARY** then read the report, which was as follows:—
 The directors, in discharge of the duties confided to them, and in accordance with the provisions of the Deed of Settlement, have requested your attendance this day to submit for your information an account of the finances of the Alfred Life Assurance Association, and a general statement of its present position and prospects. The accounts for the year,

ending the 30th June last, have been duly examined and approved by your auditors, and the balance-sheet signed by them, is laid on the table for the inspection of the members and proprietors. The following is an abstract:—From these documents it will appear that the income of the association is 22,922. 11s. 10d., while the expenses remain nearly stationary, those immediately connected with the office being somewhat less than they were the previous year. The premiums upon policies effected since the last report amount to 20,292. 2s. 9d., the claims to 7043. 11s. 10d., which sum includes 102. 7s. 10d. added by way of bonus to the amounts assured. The claims are still extremely moderate; they result from the decease of seven of the lives assured, whereas 11 or 12 deaths might reasonably have been expected during the year, which would have created claims to the amount of 13,000l. or 14,000l., exclusive of the bonus additions. This very favorable feature in the company's experience, which has been observable from its commencement, cannot fail to exercise a most beneficial effect as regards the result of the quinquennial valuations, tending, as it does, so materially to increase the surplus to be divided on those occasions. After payment of every charge, and making a reserve for every outstanding claim upon the association, the directors have been enabled to carry the sum of 6592. 2s. to the credit of the assurance fund, which now amounts to 68,400. 14s. 8d., an accumulation of great economy throughout the course of the society's operations. The amount of premiums received on policies, which have terminated during the year, is 20,151. 3s. 6d., and deducting this sum from the amount paid on account of claims, it will be seen that no more than 5028. 8s. 4d. has really been taken from the funds accumulated to meet the future liabilities of the company. The directors are not aware that any information of importance can be added to the above; they look forward to a more rapid progress in the present year than the last, having reason to believe that affairs are generally improving, and can assure the proprietors that they will not fail to do so. They are, however, fully conscious that they may present itself to augment the resources and promote the welfare of the association, in which they are all so much interested.

The **SECRETARY** then read the statement of the liabilities and assets of the company, which exhibited the following results:—On the debit side are placed the value of the sums assured, 176,800. 18s. 8d.; paid up capital, 16,800. 1s. 8d.; assurance fund, 68,400. 14s. 8d.; annuity fund, 22,172. 17s. 5d.; building fund, 8220. 1s. 8d.; Stretton Friendly Society, 1142. 15s. 4d.; interest due to proprietors, 430. 15s.; assurance claims, 4478. 18s. 11d. On the credit side the value of the premiums is 188,146. 10s. 11d.; Government securities, 32,885. 16s. 4d.; mortgages, 29,322. 0s. 10d.; reversions, 11,487. 10s. 8d.; house in Lothbury, 13,400. 17s.; railway debentures, 10,768. 14s.; value of re-assurances, 4276. 17s.; premiums due, 738. 9s.; sundry accounts, 769. 6s. 8d., making a total on the credit side of 291,795. 6s. 8d.; leaving balance at the bankers of 6656. 8s. 9d.

The **CHAIRMAN** said, he hoped the report and accounts which had just been read were satisfactory to the proprietors. They would observe that a gratifying feature in the accounts was, that their reserve fund was now nearly 70,000l. Mr. THOMAS DUNNAGE rose for the purpose of moving the adoption and reception of the report, and the motion, having been seconded by Mr. COZENS, was put to the meeting, and carried unanimously.

Mr. W. GLADSTONE then moved the election of Mr. Charles Parris to a seat in the direction.—Mr. AVELING TANKREAY seconded the motion, which was unanimously carried.

The formal business of the day being concluded, Mr. DUNNAGE said, he was glad to avail himself of the opportunity afforded by the close of the satisfactory proceedings of the day, to move that the cordial thanks of the proprietors be offered to the chairman and directors of the company, for the zeal and energy with which they had conducted its affairs. He sincerely believed that no institution, or association, in the City of London, was conducted with so much energy as the company in which they were all proprietors. Their chairman had said that the policies were somewhat beneath the average; but an easy explanation was afforded by the commercial difficulties of the past year, which affected all classes of society. It was not, therefore, surprising that life assurance companies should have suffered; for large masses of society had scarcely had the means of living securely in the storm of the past year, and numbers of those who wished to provide for the prospective and remote benefits of life assurance, were compelled to appropriate their funds to meet immediate liabilities. He considered the prospects of the company as most satisfactory, and had great pleasure in moving the thanks of the meeting to the chairman and directors.—The motion, seconded by Mr. COZENS, was carried by acclamation.

The **CHAIRMAN** briefly acknowledged the compliment on the part of himself and his co-directors. He was gratified to find the services of the directors appreciated by the proprietors; and he could assure them that they would continue to exert themselves, in the hope of deserving the approbation of which the proprietors had been so lavish. (Applause.)—The meeting then separated.

MUTUAL LIFE ASSURANCE.

On Wednesday, the 18th inst., the half-yearly meeting of the members of this society was held at the London Tavern, for the purpose of receiving the report of the auditors, the re-election of four directors, the election of one director in the place of Sir Charles Douglas, resigned, and for the election of an auditor.

WILLIAM C. HARNETT, Esq., took the chair, when **PETER HARDY, Esq.**, F.R.S. (the actuary), read the minutes of the last meeting.

The auditors' report was also read to the meeting, from which it appeared that the receipts of the society amounted to 24,177. 8s. 2d. Out of this sum 1464. 6s. 2d. had been received as premiums upon 80 new assurances. Amongst the disbursements was 6550l. for payment of nine policies by death, and 1585l. additions thereto, and 535l. for policies surrendered. The balance in favour of the society was 2853. 6s. 3d.

The **CHAIRMAN** would draw attention to the last paragraph of the report now to be read to the meeting. In reference to the proceedings at the last general meeting, it was arranged that a circular should be sent round, but subsequently various meetings of the gentlemen of the committee had been held, and the result was that no circular was sent. It was now his duty to read a short report, and if it should be their pleasure, after hearing it, that the detail of those proceedings should be read, he should be happy to comply, if the majority of the meeting should so signify. The following report was then read:—

Although it is unusual at the July court to present any other report than the mere statement of receipts and payments for the past half-year, which has just been read, the directors feel it incumbent upon them to state that, inasmuch as they have not been able to agree with the committee appointed by the general meeting of the 21st of February last, on the form of circular to be issued on the subject of commission, that matter stands in the position in which it was left by the meeting of the 20th of March, and here the directors hope that the committee and members at large will allow it to rest. The directors referred to leave the matter in the hands of the correspondence between themselves and the committee, under the conviction that to do so would only bring about the renewal of injurious discussions; and they hope that all parties will henceforth act together with that goodwill and harmony which, until a very recent period, have always distinguished the Mutual Society. The directors are happy to have it in their power to report that the progress of the society during the past half-year has been very satisfactory, and they doubt not, when it becomes generally known that all differences of opinion in the society have been settled, that it will become still more apparent.

The **CHAIRMAN** then asked if it were the pleasure of the meeting that a detail of those proceedings should be read; it would take up a considerable portion of their time, but he could say on the part of the directors, that there was no objection to read the detail to the meeting. As he received no intimation that it was the desire of the meeting that the detail should be read, he should submit that the statement of receipts and disbursements, and the short report just read, should be received and adopted. (Hear, hear.)

Mr. ROWE complained of there being no copies of the balance-sheet for his inspection.

The **CHAIRMAN** said he would send to the offices for some more copies.

A MEMBER thought they should have copies beforehand, so that they might make any observations, which they could not do at present.

The report and accounts were then unanimously adopted.

The **CHAIRMAN** said it was usual to allow the directors a sum of money, but the directors referred to leave the matter in the hands of the members, who were willing to accept of any sum which they thought their services for the past year entitled them to.

A MEMBER asked if there was no fixed sum.—The **CHAIRMAN** said there was no fixed sum; they were quite in the hands of the meeting.

Mr. CLAYTON (a director) observed that the Deed of Settlement said it should be fixed annually; they could not travel from that.

Mr. ROWE said, as there was no fixed sum, he should take upon himself to move a resolution. Having expressed himself so recently on the subject of the expenditure, he was sure that any observations he might make would not add more weight to the subject; he would, therefore, content himself by simply moving that the directors be allowed 5000l. only for the past year. No one was more disposed than himself to compensate any one to the full extent of the service rendered; but looking to the position of this society, and that in the past year its income from new premiums was only 2475l., whilst their expenditure was 4685l., he would ask them, in the name of common sense, whether, with such accounts, their yearly business would support their yearly expenses? They were paying upwards of 16 per cent. on the business transacted, and the cost of management, which was far too great, and much beyond those of other offices of a similar standing. After complaining of the salary of the actuary, the amount paid to the directors, and the medical fees, the hon. member again moved his resolution.—Mr. ROWLANDS seconded the motion.

Mr. ROWE wished to know why the usual notice had not been sent in respect to the vacancy in the direction.—The **CHAIRMAN** said all the formal notice required by the deed had been sent to the members.

Mr. GULZ had been present at several meetings of this society, and had frequently heard questions raised as to the matter of the actuary, which to him was always a source of annoyance, as that gentleman had been engaged at a salary which was to increase as the business increased.—A MEMBER said it was not the salary of the actuary, but the sum to be voted to the directors that was under consideration.

Mr. LEES said he would propose, as an amendment, that the allowance to the directors be the same as on the last occasion—viz., 1000l. a year. (Hear, hear.) Looking at their labours for the past year, the additional number of meetings, and the additional report which stated that Mr. Hardy had received an offer from an influential subject, and was about to embrace the offer, but the directors, looking at that gentleman's high standing in the profession, thought fit to retain him, and he would now ask if it was fair or

just that the contract should be broken. (Hear, hear.) The directors would certainly be no parties to break any such agreement with Mr. Hardy. It had been stated that they did not want a tip-top actuary, but he maintained that it was absolutely necessary for the welfare of this society, that they did have a tip-top actuary. (Hear, hear.) Mr. BOUTON, so far from wishing to see any reduction of the salary of Mr. Hardy, would wish to see it maintained at its present amount, and he wished that gentleman health, happiness, and long life to enjoy it. (Hear, hear.) As to the directors, he thought the society could not afford to pay more than 5000l., however valuable the services of those gentlemen might be, so that he must give his support to the original motion.

Mr. SAMBROOK was sorry to find that Mr. Rowe had been the means of spoiling that unanimity he expected at this meeting, by the resolution he had just proposed. They could not expect to secure the services of gentlemen like the present directors, without at least paying their expenses; after all, what was 300l. a year for the management of their business. (Hear, hear.) The directors, by their good management, had added to their policies as high, if not higher, bonuses than those of any office, let it be established for any number of years. An office he had insured in for 15 years had not given him half the bonuses that the Mutual had given him in 10 years, and for all that some gentlemen would now come and ask them to give their directors less than 300l. a year. (Hear, hear.) He would not touch upon Mr. Hardy's salary, for it was absurd to think of reducing it, and, in his opinion, it would amount to a want of confidence in the directors to urge any such proposition. He had great pleasure in supporting the amendment, which he hoped would be carried unanimously.—Several other members supported the amendment.

Mr. BURCHELL, a director, was sure that no member could seriously think of breaking their contract with Mr. Hardy, who deserved every reward the society could give. The **CHAIRMAN** said, with a view to show the regard the directors paid to economy, he would move that that sum, viz., the expenses of this society were 300l. a year, whilst in 1848 they had fallen to 124 per cent.; and he fully expected that, in the course of a very few years, they would gradually be reduced to 7 or 6 per cent. upon the income of the society. (Hear, hear.)

After some further discussion the **CHAIRMAN** put the amendment, which was carried by a vast majority, there being only a few hands held up for Mr. Rowe's motion.

Sir Andrew Green, Mr. Godson, M.P., Mr. Burdell, and Mr. Clayton, were re-elected directors, and Mr. Coles was elected a director, in the place of Sir C. Douglas, resigned. Mr. Halsewell was elected one of the auditors of the society.

Mr. HALSEWELL moved a vote of thanks to the directors, for their valuable services in the past year; Mr. SAMBROOK seconded the motion, which was passed unanimously.

The **CHAIRMAN** returned thanks for himself and the directors, when the meeting broke up.

LONDON LIFE ASSOCIATION.—At the half-yearly meeting of proprietors, on Wednesday last, at the offices, King William-street, Sir CLAUDIUS HUNTER in the chair—the report presented showed a receipt for Sir CLAUDIUS HUNTER 80th June last of 189,604l., leaving a balance, after disbursements, of 22,656l. The tangible securities deposited in the names of the trustees in the Bank of England amounted to 100,000l. of Canada debentures. The present value of 5,568,472l. assured on lives of members to July 1, 1848, was 2,934,746l., and the amount assured on the lives of members since July 1, 1848, amounted to 202,000l., which will be valued in 1850. The accounts showed a reduction of 67 per cent. for the current year on the premiums of members, and the directors were requested to consider the propriety of taking assurances to the amount of 7000l. instead of 5000l. as a maximum.

SWANSEA DOCK COMPANY.—The half-yearly general meeting of shareholders in this company was advertised to be held yesterday at Radley's Hotel, Bridge-street, Blackfriars, when the secretary attended, but, in consequence of the absence of parties from London, no business was done, and the meeting stands adjourned, *sine die*.

ALLEGED NUISANCE OF CHEMICAL WORKS.—At the York Assizes, before Mr. Justice Patteson and a special jury, an important case came on for hearing (Atha v. Simpson), on Saturday last, the 21st inst., and did not terminate until late in the evening of the 24th, in which the plaintiff sought to recover damages for alleged injury inflicted on his crops and timber by the noxious gases evolved from defendant's works, who is a manufacturer of soap, oil of vitriol, and sulphate of soda. Plaintiff's counsel said, that the vapours arising from these works rendered life uncomfortable in the neighbourhood, interfered with the enjoyment of property, produced great injury to vegetation, and decreased materially the value of the timber. Witnesses were called, who spoke to their withering effect on the young oak and ash trees, stated that the fruit trees and bushes were killed or dying, and that the garden, which 12 years since produced 20l. worth of fruit, had the last year only given 1l. worth. It was admitted, however, that the garden was entirely neglected, almost a wilderness. Mr. Martin, for defendant, greatly regretted this action should have been brought, as it was evidently not on plaintiff's own account, but at the instance of Mr. Waterton, of Walton Hall, a person of eccentric habits. The works had been in operation 30 years, and were a great benefit to the property in the neighbourhood; no complaint was made until 1846, and Mr. Waterton entered an action in 1847. This was referred to arbitration, and had cost 7000l. The defendant then, of course, desired to avoid further embarrassment, and gave up the manufacture of sulphate of soda. He, therefore, asked the jury to decide the question, that it might be settled. Prof. Johnston, and Drs. Brett and Glover, testified to the excellent arrangement of the works for the prevention of the escape of noxious vapours, and that there was nothing injurious to vegetation or health about the manufactory. A number of branches of apple trees, gooseberry and currant bushes, bearing healthy and goodly fruit, which had grown close to plaintiff's premises, were produced. Mr. Horsfall, surgeon, had attended the poor of Walton for six years, and they had been generally healthy; and the jury, after an hour's absence, found a verdict for the defendant.

CHARGE OF MANSLAUGHTER AGAINST A COLLIERY MANAGER AND ENGINEER.—At the Derby Assizes, on Tuesday last, Able Toplis, the manager or ground bailiff, and Thomas Gascoigne, the engineer at the Loscoe Colliery, in Derbyshire, were severely indicted for the manslaughter of John Daykin and Thomas Millward, by negligently using a rope of insufficient strength and security. It appeared that the prisoners, as well as the owner of the colliery, a gentleman residing in Hertfordshire, had been repeatedly cautioned about the insecure state of the ropes; and that on the morning of the 23d of May last Toplis did examine the rope, and found it in one place dangerous. He accordingly ordered Gascoigne to splice it, and went away, taking no further notice. Gascoigne did splice the rope, but not sufficiently, for about 12 o'clock the deceased persons were being drawn up the shaft, when it broke at the splice, and the men were killed. The splicing had been done with only five rivets through the iron splice bit, when it was always usual to have from 8 to 12. After conference between the counsel and judge, Mr. Denison, as leading counsel for the Crown, stated to the jury, that having carefully read the depositions, and conferred with his learned friend, who likewise had done so, they were both of opinion that, though the conduct of Mr. Toplis was very reprehensible and culpable, though there was very great negligence—culpable negligence—the charge of criminal negligence could not be sustained, and therefore, under the sanction of the court, he would not trouble them to go through the evidence, only, after a protracted trial, to arrive at that verdict to which he was now ready to consent. Mr. Mellor, for the prisoner, said that his employers had the highest opinion of him as a man of the most excellent character, sober and trustworthy, and they for themselves, and he for the prisoner, promised that for the future more rivets should be used, and more general care exercised.—Mr. Justice Coleridge concurred that, if a verdict of "Guilty of felony" had been returned, he thought the criminal law would have been strained; and the jury returned a verdict on all four indictments of "Not guilty."

MIDLAND GREAT WESTERN RAILWAY OF IRELAND.—In anticipation of the passing of the bill now before parliament, for advancing to this company the sum of 500,000l. out of the Consolidated Fund, and to enable the company to take the land required, without the expense imposed by the existing law, the directors have, it is understood, engaged with Mr. Dargan, the contractor, for the construction of the entire line from Mullingar to Galway.

Extracts of Charters, Royal Letters Patent, Ordinances, and Bye-Laws of the Vintners' Company; Privileges, Abuses, and Proposed Remedies; with Powers of the Court of Aldermen over all the City Companies, Guilds, &c. By JAMES INNES. 8vo., pp. 15.

It would appear somewhat strange that we should notice the appearance of a pamphlet touching upon the ordinances and bye-laws of the Vintners' Company, were it not that there is a link of communication between the miner and the vintner in more senses than one; while the one before us, which is very ably put by the author of the pamphlet, affords another illustration of the abuses of this, or that, or the other of the corporate bodies, and the "guilds," or "fraternities," of the municipality. There is a something quaint in the way in which the editor tells his story, and his extracts, or abstract, is not only amusing in itself, but, we assume, will be held as important by the members of that "guild." The first charter was granted the 15th July, 1363 (37 Edward III.), which was confirmed in 1428 (6 Henry IV.), and in the year 1437 (15 Henry IV.), subsequent to which certain Royal Letters Patent and charters were granted, by which the company is now governed, bearing date Feb. 9, 1612 (9 James I.). It should be observed that the object of Mr. Innes, in the publication of this pamphlet, is to show that the system of taking youths nominally as apprentices, without any application on their part, whereby they may acquire the "art and mystery" of a vintner (we presume the mixture, or admixture, of certain compounds), but merely to acquire the privileges, is a fraud in itself; and this, we think, is self-evident, not requiring any extraordinary extent of common sense, or intelligence, although in the courts of law there might be much argument and forensic knowledge deemed necessary.

It appears that the freedom and commonality of the "mystery" of vintner have exclusive privileges and powers, and are exempt from certain charges and immunities which are all duly recited in the several Acts, charters, and letters patent, and having adduced the various rights, the author concludes with "remedies," which he recommends should be adopted to meet the abuses which exist. We perfectly agree with the propriety of the strict observance of laws laid down, and such as are not confined to the vintner, but equally apply to the artificer, and even to those who "compose" the present article. It is, in many instances, essentially necessary that an apprenticeship, or servitude, should be given, so as to render the party competent to execute the work which he may be called upon to perform, and also to instruct and superintend others in his employ. We well know the importance to be attached to the duties of engineers and machinists, as well as to other branches of scientific knowledge, and the attainments required, hence the necessity of application, and a "seven years' apprenticeship." It is in this light that we look on the advocacy of the writer, and the arguments he adduces in support of his views—how far such may be necessary for the vintner we are not prepared to say, but we do know it is essential in other cases. As a principle, upheld and supported as it is by Mr. Innes, we think he has done "the State some service," and we should be glad if the example he has thus set of exposing abuses was followed by others in the various "crafts and mysteries."

Mining Correspondence.

[The Commissioners of Inland Revenue having notified to us their resolve to charge with advertisement duty all reports having the agents' names affixed, we appealed to them in a memorial, setting forth that we, or the respective companies, derived no advantage therefrom—the only object sought, or obtained, being that of affording to the mine adventurer and public the greatest guarantee we could for the truthfulness and bona fide nature of the statements periodically set forth, by authenticating them, and thus fixing a responsibility on the writer. The Commissioners have replied, that "the reports, with names attached, are advertisements, and that duty will be charged thereon." We have no alternative but submitting to their dictum. How far the Commissioners are correct in the view they take, our readers can judge as well as ourselves;—we can but hope that, on reflection, they will see the error into which they have fallen, and rescind the orders they have issued. All reports inserted under this head, however, may, as heretofore, be considered as furnished by the regular agents of the company; and we shall carefully guard against the publication of statements which cannot be relied on as correct.]

BRITISH MINES.

ALFRED CONSOLS.—The lode in Field's engine-shaft, sinking under the 50 fms. level, contains a branch of solid yellow copper ore on the south part of the lode, from 5 to 7 in. wide, and the north part is capped with copper interspersed through the whole of the lode. The different levels in these mines are, for the last week, without change since the last report. The water still continues to sink in the Great Alfred Mine from 1 to 2 ft. a week. We set six men, on Monday last, over the back of the 10 fathom level, in this mine, on tribute, and, no doubt, as we clear up the levels, pretty much ground will be found that will pay well for working.

BARRISTOWN.—The lode in the back of the adit level, for 15 fms. west of the adit, is producing in places about 10 cwt. of lead per fm.; the lode in the bottom of the adit level, west of the adit, is also producing about 10 cwt. of lead per fm. In the 16 fms. level, east end, where the lode was cut off by a slide, we have driven 34 fms. south, and cut a part of the lode, about 4 in. wide, with a good branch of lead. The pitch to the west of this ground is poor.

BEDFORD UNITED.—At Wheel Marquis, the lode in Bailey's winze, in the 90 is 3 ft. wide—a good ore lode; in the 80 fms. level, the lode is still worth about 3 tons of ore per fm. We continue to drive by the side of the lode in the 80 fms. level, in the 80 fms. level, is 3 ft. wide, producing some saving work. In the 70 east the lode is 3 ft. wide, producing fine stones of ore—a very promising lode.

BRYN-AR-Idan.—The men will finish cutting the plat on Saturday next and shortly after will commence driving east and west on the lode for a 10 fathom level. The lode in the shaft is 8 ft. wide, yielding 15 cwt. of ore per fm. The lode in the shaft in the back of the adit level, east from the shaft, is large, producing a ton of ore per fm.; the lode in the back of this level, east from the winze, is yielding 15 cwt. of ore per fm. The lode in the bottom of the old men's workings at the shallow adit level is producing 15 cwt. of ore per fm. The lode in the back of the deep adit level, 17 fms. west from the shaft, is suspended for the present. We have not more than about 8 tons of ore dressed, in consequence of one of the levers of the crusher breaking, and they were so much engaged at the foundry at Aberystwyth, that we could not get a new one in less than 10 days; but we are now again in full course of working, and expect to have from 20 to 25 tons dressed on Saturday next, as we have a large quantity of work all ready for the crusher. We have built a small pond on the mine, which is of great service to us in crushing in such dry weather as we have had of late, and we now have a full supply.

CWM ERFIN.—The dryness of the weather has suspended all our underground operations, with the exception of the winze sinking 25 fathoms east of the winze-shaft, which is worth 12 ft. per fm. We are raising the embankment of our pond, which will be very beneficial should another dry season occur. In our dressing department we can at present dry but very little.

DEVON AND COURTESAY.—The lode in the end, driving west in the 40 fms. level, is 3 ft. wide, the south part of which is composed of strong capels, spotted with ore, the north part is white iron, and soft spar; in the rise in the back of this level the lode continues about 3 ft. wide, composed of good ore, mixed with some iron and gossan ore. In the rise in the back of the 50 fms. level, on the south lode, the lode continues to yield about 1½ ton of ore per fathom. The men from this level driving east are taken to this place, to assist the others for the purpose of effecting a communication with the level above, which I expect will be done in about three weeks.

DYFNWYM (LEAD).—Little or nothing has been done during the past week except preparatory work at the dressing floors, &c. The lode at the castle is now 9 ft. wide, with good saving work. The poorer ore can not be returned, until the arrival of the stamps, which are expected daily, and from six to seven tons of higher produce will be ready next week.

EAST CROWNDAL.—In Rix Hill mine the shaft is very near the point of hoisting, and producing good saving work for tin; no alteration in the cross-cut since my last. June tin is at its destination; it weighs 5 tons 5 lbs. 2 qrs. 2 lbs.—price, 40l. 10s. per ton; after cost, it gives 11s. 1d. I have but little doubt of our meeting the cost for the next three months, and after that to be in a position, should tin keep up at a fair price, to pay profits to the adventurers.

ESGAIR L.L.I.—The south lode in the shaft in the bottom of the deep adit, east of the engine-shaft, is about the same as last reported. In my last report I informed you the north lode in the deep adit was increasing in size, and more water coming from the present end, and the lode producing more fine lead in the small than in the rough, the whole of the small containing lead, but not sufficient to put a value on, since which the lode is much improved, and is now 3 ft. wide, and will yield, on an average, from 4 to 5 cwt. of ore per fm., and looking very kindly, with much water coming from the present end, and will produce as good stones of lead as I ever saw in Egair L.L.I. The lode in the winze below the shallow adit is looking much the same as last reported.

EXMOOR WHEEL ELIZA.—During the last week our progress in driving north in the 24 fms. level has been slow, in consequence of the ground being harder than usual. According to the regular underlay of the lode, there is about 15 ft. more to drive to cut it, while we have been completing in a fortnight, or at most, three weeks. In driving south-west on the summer lode a slide was met with, which hove it, we pressed north-west of this we hope to be more explicit in our next. The engine continues to work well.

HEIGNSTON DOWN CONSOLS.—The ground in Bailey's engine-shaft is not quite so easy of progress as for some time past. The lode in Hitchens's shaft is improved in size and quality, and is now full 30 in. wide, and producing good stones of copper ore. The lode in the 35 fms. level, east and west of cross-cut, continues to produce some good saving work for tin ore, with occasional stones of grey ore, of superior quality.

HOLMBUSH.—The lode in the 120 fms. level south is 4 ft. wide, composed of quartz and stones of lead. The lode in the 120 fms. level, east of Hitchens's shaft, on the south part, is 10 in. wide, producing about a ton of copper ore per fm.; but little progress can be made, the country being hard ironstone. The ground in the 120 fms. level cross-cut south, towards the Flap-Jack lode, is favourable. The lode in the 110 fms. level south is 3 ft. wide, producing 4 cwt. of lead per fm. The lode in the back of the level, connecting with the end, will produce about the same quantity of lead per fm. The lode in the 100 fms. level south is 2½ ft. wide, composed of soft spar, pyrite, and stones of lead, opening tribute ground. The Flap-Jack lode in the 100 fms. level, east of the cross-course, is 30 in. wide, composed of spar, muddie, and stones of copper ore. We have removed the men to stop the back of the level, for a few days, to assist our sampling, and to-morrow we shall take down the lode.

KIRKCOULDBRIGHTSHIRE.—The lode in the 62 fms. level west is 5 ft. wide with good spots of lead in places. The lode in the 50, east of Stewart's, is 2 ft. wide, with a small branch of lead, worth from 2 to 3 cwt. of ore to the fm. The lode in Keith's shaft is 2½ ft. wide, with a few spots of ore in it. The lode in the 50, west of Keith's, is 3 ft. wide, yielding 12 cwt. of ore to the fm.; the lode in the winze, over this end, is 2½ ft. wide, worth 8 cwt. of ore to the fm. The lode in the winze under the 40, east of Stewart's, is 2 ft. wide, with spots of lead in it. We have engaged a vessel to take a cargo of lead on Monday next.

LAMERHOOF WHEEL MARIA.—Since my last we have got the eastern wall of the cross-course, which will enable us to take it with greater advantage, and sink the shaft much faster than we have hitherto been enabled to do; I hope in about 6 ft. more it will leave the shaft, which is now down 6 fms. 2 ft. below the 50. At Davey's shaft we have got through those beds of spar which so seriously interfered with our working there, and are now in a fair way of sinking.

MENDIP MILLS.—We have a tolerable good pile of slags prepared for the furnaces, which I intend smelting about the latter part of the present week. The beds of slags in Charterhouse Valley continue to produce some very good slags, and, I think, on the whole, are improving in quality as we proceed towards the eastern part of the valley. In Blackmoor, I am glad to say we are progressing very favourably with the erection of the engine; the greater part is already fixed in its place. The carpenters are at present busily engaged in fixing the stands for carrying the chains from the engine to the incline plane at Blackmoor, which we hope to see completed in two or three days from the present. The masons are getting on as fast as possible with the reverberatory furnace. The walls of the house are completed, and the roof will, we expect, be finished this evening. The flues are also in a forward state; I hope, therefore, to see the furnace completed by the end of the week.

SOUTH WALES MINES.—At Nant-y-cra, the new lode in the shallow adit west is about the same as last reported. The lode in Bodcol deep adit east is 18 in. wide, and looking more kindly than when last reported. The lode in Dalwin deep adit, east of the Rhymney river, is 3 ft. wide, and is now producing some good stones of lead, with copper and muddie, and looking more kindly than when last reported.

SOUTH WHEEL TRELAWNY.—The engine-shaft is sunk 10 fms. below the 30 fms. level, and also cased and divided down the engine-shaft, as well as the winze (three) 10 fms. below the 30 fms. level, to take the stuff from the 40 fms. level—ground in shaft is just the same as last reported, the water as well. We are now engaged in cutting some ground for a small pit in the 40 fms. level.

TRELEIGH CONSOLS.—At Garden's engine-shaft the ground is much as usual. In the 50, west of the lode, the lode is 1 ft. wide, with stones of ore. In the 50, west of ditto, the lode is 15 in. wide, with stones of ore; in the same level, on the north part, the lode is 10 in. wide, with stones of ore. In the 70, west of Garden's, the lode is 10 in. wide, with stones of ore. In the 60, west of ditto, the lode is 2½ ft. wide, poor. At Wheel Parent, in the 30 fms. level, east, the lode is 2 ft. wide, worth 1½ ft. per fm.; in the 30 fms. level west the lode is 18 in. wide, with stones of ore. At the winze-shaft west, the plat is cut in the 12 fms. level, and we shall commence sinking next week on the middle lode—shaft from surface down 11 fms.; rise against ditto, up 6 fms., lode small and poor. We expect to hole this shaft next week, and shall then sink below the adit.

WEST WHEEL JEWEL.—The rise in the back of the 70 fms. level, west of Williams's cross-course, on Wheel Jewel lode, worth 3½ ft. per fm. The winze in the bottom of the 57 fms. level, west of ditto, cross-course on ditto, lode worth 4½ ft. per fm. In the 47 fms. level, west of ditto, cross-course on ditto, lode not taken down in the past week. In the deep adit, west of ditto, cross-course on ditto, lode not taken down in the past week. The deep adit, west of Tregoning's shaft, on Tolcarne tin lode, is producing stones of tin. The lode in the back of the 12 fms. level, west of Pryor's winze, on the same lode, are worth 14½ ft. per fm. In the lode in the back of the 12 fms. level, east of Pryor's winze, on ditto, the lode is worth 12 ft. per fm. In the lode in the bottom of the 12 fms. level, east of Tregoning's shaft, on ditto, the lode is worth 12 ft. per fm.; the lode in the bottom of this level, east of Tregoning's winze, in the same lode, are worth 16 ft. per fm. These lodes are working on tribute.

WELLINGTON.—I am engaged here to-day preparing the copper ore for sampling the 24th inst., and would at the same time say, that the lode in the 30 fathom level, east of the engine-shaft, is about 1 ft. wide, all saving work for copper ore of good quality; and the lode in the 23 fms. level, east of Percival's shaft, is just the same in size and character as in the 32 fms. level; both of these levels are opening good tribute ground; the other levels in the mine are poor at present. Our tribute pitches are, on the whole,

just as they have been for some time past, doing pretty well. Our last sale of tinstuff was on Friday, the 20th inst., which sold for 59l. 11s. 7d.; our copper sampling, the 24th inst., is computed 118 tons.

WHEEL TRELAWNY.—The lode in the 68 fathom level north is small, but containing some good stones of lead in places; in the south end, in this level, the lode is about 18 in. wide, not containing lead enough at present to set a value on, but, judging from its kindly appearance, and as we have a good lode going down in the lode a little to the south, and about 6 fms. above this end, I hope to see an improvement here shortly. In these lodes, in the 62 fms. level, south of the winze, the lode is still worth 1½ ton of lead per fm. The lode in the lode in the back of the 55 fms. level, both north and south, is producing, on an average, and worth 14½ ft. per fathom. The lode in the back of the 45 continue to yield 1 cwt. of lead per fm. The cross-cut in the 30 fms. level west is without any important alteration. We intend to sample next week, about 60 tons of ore, of rich quality, and also 60 tons of inferior, which have been several months accumulating.

WHEEL VINCENT.—We have a great improvement in the south lode; we broke, on Tuesday night last, one of the best stones of tin I ever saw; the men who are working in the lode weighed it before I saw it, it was 9 lbs. weight, solid tin, of the richest quality; the lode is about 1½ ft. wide, splendid work—it still appears to be getting larger. We have commenced stopping on the north lode; it is 4 feet wide, of splendid gossan and tin—moderate stamps work. I expect the reports of three practical agents that have seen the mine, will be received next week. The north lode, although carrying tin, I believe will make a mass of copper under the gossan. I should say that never could be a more kindly lode seen in the bowels of the earth—we frequently break spots of copper in the gossan. We are getting on as fast as possible with our stamps, &c.; we hope to set them to work in about a fortnight, which would have been done long ago had we decided about the water-course, &c. I have boxed up the stone of tin, and sent it to W. Wiseman, Esq., of Kelvedon, Essex.

WHEEL TRELAWNY.—The 82 cross-cut is still progressing favourably, although the ground is of late harder than it was. The lode in the 72, north of this shaft, is 2 ft. wide, and worth 12 ft. per fm.; in the same level south the lode is 1½ ft. wide, and worth 24 ft. per fm.; the lode in the back of this level are still fairly productive. The lode in the 62 north is 2 ft. wide, and worth 14½ ft. per fathom. The lode in the back of this level are also fairly productive. The lode in the winze sinking under the level south is 1½ ft. wide, and worth 5 ft. per fm. At Trelawny's shaft, the 72 cross-cut is extended 34 fms. west. The lode in the 52, north of this shaft, is 3½ ft. wide, and worth 16 ft. per fathom; all the stops in the back of this level continue to be fairly productive. The lode in the 42 north are also fairly productive; the lode in the winze under this level is 2 ft. wide, and worth 5 ft. per fm. At the north mine, the lode in the 55, north of Trelawny is 1½ ft. wide, and worth 11 ft. per fm. In the 45, north of Trelawny, is 2 ft. wide, and worth 7 ft. per fm. Since our last report, we have completed the plat in the 40 fathom level. Smith's shaft is sunk 1½ fms. under the 40 fms. level, where the lode is 3 ft. wide, and worth 5 ft. per fm. The lode in the 40, south of this shaft, is 2½ ft. wide, and worth 5 ft. per fm.; the lode in the back of this level are usually productive. The lode in the back of the 30 fms. level are also usually productive. On the 20th inst., we sold a parcel of lead ore to Messrs. Walker, Parker, and Co., computed 165 tons, at 177.

FOREIGN MINES.

Mines.	Tons of Ore.	Per Cent.	Flue Copper.
Ralpas	58	6	3-48
Old Mine	50	6	3-00
United Mines	35	5½	1-92
Michell's	14	6	0-84
Mancu's	2½	5	0-12
Carl Johan's	6	10	0-60
San Jodas	3	6	0-12
Ryder's	2½	7	0-17
Total	171		10-31

Mining Report from the 13th June to the 2d July.

United Mines.—Since handing you my last report, there has been no particular alteration to notice in the workings on Ward's lode. The ground in the level is favourable for driving; the lode is small, but contains stones of good ore. The prospects in the new sink continue flattering, and the lode yields fair returns of ore. At Woodfall's the tributors produce some gossan ore, of a superior quality, from the north lode, where they have also opened workings on some other branches, the produce of which is at present satisfactory.

Old Mine.—The general appearance of this mine holds out great promise, but in the above estimate a falling off is visible, which may be accounted for by the number of hands employed in unloading coal vessels; as these, however, are now returned to their work, we may expect a more satisfactory result next month. The ore has also been of rather a lower quality, on account of the returns made from the old halvan heaps.

Ryder's.—The tributors operations at this mine are still productive, and the lode, although small and hard, leaves a remunerative profit on the output.

Michell's.—The workings at this mine are at present confined to surface operations, and, whilst the summer continues, to picking over the attic heaps.

Carl Johan's.—The new sink is still productive, and the prospects are good; during the last fortnight some other small branches have been discovered, from which some small parcels of ore, of a good quality, are being produced.

Ore Dressing.—These operations are confined to jiggling of Ward's mine, but we have only work for the machines for a few days.

Enclosed is Captain Monk's report on the Ralpas Mine:—
Ralpas, July 3.—In compliance with your order I forward you my report of the mine, which will be found to present a detailed account of the several bargains now in progress. In the stopes west of Monk's shaft, in our 30 fms. workings, the lode is upwards of 10 ft. in size, containing patches of purple ore in every part of the bargain wherever the hard flinty gossan has disappeared, and been replaced by limestone of a more encouraging nature; indeed, this stopes has improved considerably within the last few days, and is at present wearing an aspect far superior to what it has done for some time past. In the northern cross-cut, but in the 30 fms. workings, the lode is upwards of 6 ft. high, running after a smooth wall, and leaving good reserves in the roof, containing purple and yellow ore mixed together, and producing upwards of 5 tons of ore per fm.; the ground here is also assuming a more settled appearance, and at the same time continues steadily and favourably for driving. In the southern cross-cut, but in the 20, driving towards the south-east workings, we have as yet discovered nothing worthy of notice. In the roof stopes, above the 20, we have up to the present time been unable to resume this bargain, owing to the late inundation at the mine having lodged a large quantity of ice on the retreating of the water in this particular spot; but I expect, ere long, to be able to get it in a working condition, as there is still a good course of ore in the roof, which we cannot afford to abandon. In the 10 fms. workings the ground still continues much disordered, which no doubt is owing to the flint formation, of late too much felt at Ralpas, presenting itself, and causing a total annihilation of the limestone, which is known to contain our richest ores. In other parts of the mine there is nothing new worthy of note. Our tributors system is going on brisk, and, up to the present time, I am inclined to think that the men have raised about 18 tons of 6 per cent. ore.

AUSTRALIAN MINING COMPANY.—Tungillo Mines, March 5.

Total quantity of ore sent to Port Adelaide, supposed to be above 26 per cent. produce, 313 tons; now lying in and on the mine, not dressed, 78 tons—total (21 cwt.) above 26 per cent. from commencement, 390 tons; now lying on the mine, available for smelting in the colony, supposed from 10 to 15 per cent. produce, 265 tons—total raised, 655 tons.

Monthly Report.—At Anstey's engine-shaft, the ground continues to be just as hard as usual; there is some increase in the water, but no more than can easily be drained by employing one horse in the winze at a time—this shaft is now about 15 fathoms deep from the surface. The lode in the cross-cut, west from Leary's winze, is harder than I have seen it in any part of the mine, and is about 3 ft. wide, the whole of which is composed of spar and copper ore of good quality; we have as yet got the western wall of the lode in this end. In the cross-cut, west from Hawling's winze, we have passed through a vein of spar and gossan, 18 in. wide, which is unproductive; it appears we have the main lode still to cut into. The lode in the 40, south of Goad's winze, are producing native copper, red oxide, and black sulphure ore of superior quality, and are promising to be lasting. In the stopes over the 40, north from Goad's winze, during the past month the quantity of ore has not been so good as usual; the ore broken by the water in February remains on the mine, awaiting the completion of the railway before they will be extracted, which will be some hindrance to our stopping from here during part of this month. In the 40 fms. level, north from Stephens's winze, about 3 fms. remain to be driven, when we shall have completed this level from Stephens's to Phillips's winze, where we shall have good ventilation, resume the driving north from Phillips's winze into the unexplored ground, and raise ore in back of the level passed through in February month. In the 40 fms. level, south from Phillips's winze, 5 fms. remain to be driven between this and the last named end; the lode here remains unbroken in size of the level, the value of it is, therefore, not yet known. The cutting down of Masterman's and Rook's winzes will, I hope, be nearly completed in March month, when we shall be in a position to apply a horse pump, so as to sink Goad's winze below the 40 fms. level, as by sinking in the ore ground we can hope not only to keep up our usual produce, but, if possible, to increase the monthly quantity of ore raised in future. In compliance with your verbal (and since my return), confirmed by written instructions, I have limited the number of working men employed on the mine to 50 men, and as the railway is now nearly completed, I have directed those 50 men to tram out their own ore and rubbish—thus dispensing with the services of 10 barrow and windlass men, and, consequently, lessening the expenditure in extraction from 50l. to 60l. per month. There are in all about 40 men discharged; and the principle on which I have acted has been to retain in the service of the company all who are under agreement, those who pay a weekly rent for the company's cottages, and those who have erected houses in the new township, preferring at the same time such as may have been longest in the service of the company, and such as I consider able and experienced miners. Many of the bachelors have already left the ground; but some of them wish to remain and try the upper levels of the mine on tribute, to whom I have intimated, if they can find any ground they may like to work, I will give them a fair tribute for the ore they may raise. I hope these arrangements, made to the best of my judgment, will meet with your approbation.

April 7.—Total quantity of ore raised from the commencement, supposed to be above 26 per cent. produce, and sent to Port Adelaide, 320 tons; ditto lying in and on the mine, 100 tons—total raised above 26 per cent., 420 tons; lying on the mine available for smelting in the colony, 300 tons—total (21 cwt.) raised from commencement, 720 tons.

Monthly Report.—At Anstey's shaft, the ground continues hard in the past month; no more than 3 ft. have been sunk, owing to an accident to the pumping engine, and the horses having strayed away, during which time the men have been employed about the railway, &c. The stopes over the 40, north from Goad's winze, turn out remarkably well, and it now appears we have not taken away all the lode, there being a rich lode still remaining to break down inside the eastern wall of the Gannis; in the stopes over the 40, south from Goad's winze, the ore runs back inside or west of the 40 fms. level, in which the railway is laid; they have turned out well in the past month, and still continue productive; in the 40, north from Harvey's cross-cut, we have cut into a lode supposed to be Hogan's lode, which is composed of solid copper ore, averaging full 26 per cent. of copper, on which we have commenced to drive northward towards the stopes south from Goad's winze; in the 40, south from Harvey's cross-cut, we have made an addition of 6 ft. more, to drive south on the lode of ore described in the 40 north, which is equally valuable going forward in this opposite direction; in the 40 fms. level, north from Richard's cross-cut, we have cut into the same lode as described in the 40 north, but the percentage of ore in this place is comparatively low, being so mixed up with iron; still it is a fine lode, and likely to improve in value as the operations extend. In the 40, south from Richard's cross-cut, we have, since our last report, laid open the same lode described in the 40 north, and have employed six men to drive the lode down remarkably well, and it now appears we have not taken away all the lode, there being a rich lode still remaining to break down inside the eastern wall of the Gannis; in the stopes over the 40, south from Goad's winze, remaining to be driven through, when the adit level will be finished, and ready to receive the railway about 180 fms. from its opening, at the foot of the hill. This end is productive, and promising to improve. A new cross-cut in the 40, about 10 fms. south from Richard's cross-cut is to be driven west; the side lode discovered

in Richard's and Harvey's cross-cut encourage us to expect the lode in this place, as in the two former ones, will prove equally valuable. The cutting down of Masterman's shaft being now nearly completed, these four men will soon be engaged in fixing guides for the bucket ropes and pump rods, and also a run of ladders from surface to the 40, or adit level, so as to commence sinking in Goad's winze, below the bottom level. The pumps have arrived on the spot, and the horse pumping-engine is daily expected to follow, from the Water Rotchist; and I expect, by the middle or end of May, to commence sinking below the water level, and am of opinion that, by the time the steam-engine arrives, by means of horse power, we shall get down and be driving the 50 fms. level. The discovery of such a good lode of ore running parallel with Baker's lode, there being no more than 3 fms. of unproductive ground between them, is most important and valuable, by which the length of the ore ground is increased some 25 fms., and makes it appear almost certain that we shall soon have 10 fms. more in length discovered by driving a new cross-cut still further south from the level in which the railway is laid. It has given me much pleasure to be in a position to give this report of our progress in the Tungillo Mine. I am getting more and more sanguine as to the result. My belief is, we have only to get down some 10 or 20 fms. deeper to prove that, in venturing to value the Australian Mining Company's special survey at 300,000l., I was not building castles in the air. Thirty-six new men will now be employed in raising ore, and, as we make more room, the number will be gradually increased. I expect we shall raise full 100 tons in April month, and, on the whole, of better quality than usual. There are now lying on the ore floors the rocks of solid black ore, of the respective heights of 8 cwt., 1 cwt. and 6 cwt., ready for cartage, as specimens from Goad's stopes, on Baker's lode, in the back of the 40, containing, I suppose, some 60 per cent. of copper; and there is now another on the mine of the same sort, about 12 cwt., all of which I will forward shortly to Port Adelaide, hoping they will arrive safe in England, and satisfy the directors and shareholders that we have, in reality, a rich and valuable lode of copper ore.

BOLANOS MINES.—The following report was received on the 23d inst.:

El Bote Mine, June 2.—In San Genaro shaft we succeeded in draining the water with two malacates to the bottom of Taylor's cross-cut on May 16, and on the 11th commenced sending down the pitwork of the third plunger lift; and, by the 19th, we had so far advanced with the pitwork, as to do away with one malacate of the drainage; and, on the 23d, the other was taken off, and the engine stopped whilst we were fixing the upper part of the lift and connecting the rods. The work would have been completed much sooner had it not been for an accident that occurred on the afternoon of Sunday, the 13th, owing to the carelessness of two of the Mexican workmen who were guiding two of the plungers for their descent; the danger of one came in contact with the bolt of the rod of the engine going out of doors, and the force of the blow was so great as to snap the chains. During the four days the engine was idle, the water rose in the shaft 57 varas above the head of Taylor's cross-cut, but the engine being set to work on the evening of the 26th, the water on the 29th was lowered to the bottom of Taylor's cross-cut, and the barometers went down to resume the driving of the cross-cut, and which has since been carried on without any hindrance whatever, and about 14 varas has been driven during the week. We have not as yet got any more water in the drainage, and the driving has commenced. The coming stream at present is about 24 strokes per minute for the engine.

At San Fernando, in consequence of having received your orders to stop the drainage on the morning of the 13th May, there has been but very little done in the place since last reported. Compania level east was communicated with plan No. 2 on the 10th May, and when the driving of this level shall be recommenced, will soon be in ore ground, and in the vein in the eastern part of the plan is about 3 varas wide, in ore of 4 or 5 marks per monoton, and which seems to dip east towards the level, and the portion of the vein worked is nearly 5 varas in width, but notwithstanding the vein is at present somewhat disordered, and the ore of low ley, yet when this plan should become freed of the water, it will produce a good deal of cargo. In plan No. 4 the vein continues much the same as when last reported. Compania level west, and also the level east from plan No. 2 west, are both very poor. Since the drainage was stopped at San Fernando about 6 paradas have gone to work in the point to the west of plan No. 3 west, and in the rises of Guadalupe east and San Antonio; and the cargo extracted during the last two weeks has been of good quality, most of which has been broken from the first level of workings, and which I am sorry to say, has since failed, so that I fear our extraction will not be much, until we are enabled to resume the working of the plans in depth, and which I am most anxious to do.

Extract from a Letter, dated June 4, 1849.

CELESTINA has continued improving in the rise of Providence, which I mentioned in my last report; it is now leaving some profit, though this cannot be expected to be of much duration.

LA GRANJA HACIENDA is again at work, to grind the stock of ores on hand, in order that the produce may be included in the accounts for June quarter, if I be not disappointed in procuring a sufficiency of salt for their reduction. I have been receiving a few hundred cargues lately, but it does not come in so fast as we require it.

EL BOTE NEGOCIACION.—In former letters I have pointed out the difficulties which I had to contend with from want of funds, and have prepared you with the probability of the principal works of the negotiation, from the same cause. I have now to advise you that I have been obliged to take this step somewhat sooner than I anticipated. On Monday, the 13th, I reduced the establishment as far as I possibly could under the circumstances. I discharged the whole of the underground workmen, with the mining capitalists, &c. I stopped the drainage at San Fernando, and sent the cattle to pasture, and reduced the number of masons, carpenters, and blacksmiths, retaining only those which were necessary to finish the few works which absolutely indispensable. For information concerning the state of the mine, I have referred you to the report of the chief miner. It was determined, however, to finish the work of putting down the pumps in San Genaro as far as Taylor's cross-cut, if possible; and this was finally effected on the 29th, after being delayed some days by a serious accident, the chain having broken while lowering two of the pumps.

For the present, I have thought it advisable to proceed with the drainage by engine at San Genaro, because I have some store of wood on hand for a few months without requiring any additional fuel in coal; and I also hesitate to incur the expense of discharging the drainage engine, as it is a piece of machinery which still reveals to me, as far as reports, of Taylor's cross-cut has in consequence been resumed. Moreover, I have permitted a few pairs of men to go down and break ore, where they can find it above the water, paying them at 81 per carga—they coming to surface for their tools, &c.; and also cuadradores (pickers) are employed in collecting ore from the attic heap and cleaning the little which is still raised. This work, as well as freight to Cinco Señores is paid of course, according to the quantity produced, and one person is charged with the whole. For information concerning the state of the mine, I have referred you to the report of the chief miner. The bottoms of Compania are now about 9 varas under the water, which appears to have become stationary at that level.

GUADALCANAL MINES.—[Extract of a letter from the superintendent, dated July 11.]—I am happy to say, on 30 fms. (and Poco Rico) is looking better than ever, and if we are not at this moment raising sufficient ore to pay costs, we are not very far short of so doing. I hope, in conformity with the Spanish laws, to advise the Spanish company, at the end of this month, that the mine is in profitable produce.

LINARES LEAD MINES.—[Extract from a letter from Mr. H. Thomas, dated Linares, July 11.]—My advice from Sevilla state that the galenas (carts), 38 in number, left that place on June 30, and may be expected to arrive here daily; they will bring all the lighter articles of the cargo of the "One and All." The bob and cylinder for the engine had also been despatched, and a second detachment of 29 carts and 3 wagons were to leave Sevilla on the 9th of July. The preparatory works at the mine are nearly completed, and, although the weather is very hot, the workmen were all in good health. The accounts which I continue to receive of the mine, and as far as reports can do so, of the great productiveness of Poco Rico, and I do not think we shall be long, after the water is out, in stopping the costs. The mine is generally spoken of as the best in the district, and from my own observations, and the circumstantial reports I have received, I think if there is a better mine elsewhere, it must be a good one indeed.

REAL DEL MONTE MINES.—Letters dated June 13 have been received from Real del Monte, announcing the transfer of the mines and property to the parties in Mexico who have purchased the same; the terms of purchase and sale being that the English company should be relieved from all liabilities in Mexico (amounting to about \$100,000), and be paid a net sum of \$30,000, in consideration of their giving up to the purchasers all their property in mines, stores, and machinery. A new company has already been formed in the City of Mexico, consisting of 350 shares, of \$100 each, and paying, thus providing a capital of \$35,000, of which \$100,000 is the price or value of the great productiveness of Poco Rico, and I do not think we shall be long, after the water is out, in stopping the costs. The mine is generally spoken of as the best in the district, and from my own observations, and the circumstantial reports I have received, I think if there is a better mine elsewhere, it must be a good one indeed.

ST. JOHN DEL REY MINES.—Morro Velho, May 18.

to supply the stamps with stones; that the ore would fall off in value, the lodes being worked too wide; and that the expenditure would be augmented. A fortnight after you published "I. F.'s" letter, your Journal contained a report from Morro Velho, dated 8th May, saying, "that although kept up with great spirit, the supply of stone was not sufficient, and during the month 462 tons had been taken from the refuse heap." In the same document, the costs are given at Rs. 45,796 17s, which is the highest figure yet attained. As to the width of the workings, more especially in the Middle Cachoeira, I may, perhaps, shortly address you.—VERAX: City, July 26.

MINING IN NEW ZEALAND.

SIR.—By communications I have just received from the colony, I am glad to inform you that the Kawaw Mine is progressing most satisfactorily. It appears that, from the large proportion of sulphur in the ore, several instances of spontaneous combustion in the holds of vessels had taken place, which made masters afraid to take in the ore, and it was with great difficulty they could get it shipped: under these circumstances, it was determined to calcine and smelt the ore on the spot, and for this purpose works have been erected with great perseverance, which were expected to be in active operation by May or June. The mine itself, it is believed, will prove a second Burra Burra; for, although the ore is not quite so rich, the expense of carriage to the port will be saved—by itself a good profit—while the quantity of ore is said to be apparently inexhaustible. During the last four years, although there has been no ore raised, the works have been going on vigorously, and the riches of the mine are now conspicuous. Four shafts have been sunk, varying from 18 to 32 fms.; an adit level driven in the hill at a depth of 16 fms. from summit; three levels have been driven respectively 120, 44, and 70 fms. on the course of the lodes, leaving in sight at least 100,000 tons of ore, which may, it is calculated, be raised to surface for the extraordinary small cost of 1s. 3d. per ton. The cost of sinking the shafts varied from 40s. to 80s.; and driving the levels, from 10s. to 16s. per fm. There were, at the dates of the last advices, 1000 tons of ore at surface ready for smelting; and it was calculated that the calcining-house would calcine 144 tons per week. Sixteen miners lately left the mines for Sydney, consequently there were but six men at the Kawaw; but these, it was estimated, could raise 60 tons per day, and thus about keep the calcining-works and furnaces in full operation. It was a general opinion in the colony that, if encouragement was given by Government, New Zealand would become a most important mining district, as mineral indications were everywhere apparent over a great extent of country; but general dissatisfaction was expressed at the proceeding of Governor Grey, whose entire system of regulations, with regard to the settlement of lands, is stated as a flagrant jobbing scheme, and subversive of the best interests of the settlers. W. M. G.

Fore-street, Cripplegate, July 25.

EAST BIRCH TOR TIN MINE.

SIR.—In reading the reports from various mines, in the Journal of the 7th inst., I notice one from the above mine, in which it is stated that a great improvement had taken place in the adit level, and fine rocks of tin had been taken up. I was glad to see this, although I am in no way connected with the mine or the company. One day last week I happened to pass by the mine, when I saw the rocks of tin alluded to, and I must say I was agreeably disappointed, for often I have found reports of too high colouring; but the case was not so here, and Capt. Browning might have safely said more. However, it must be a matter of consolation to the shareholders to know they have now on surface 300 sacks of tinstuff, and in it the finest rocks of tin that have been seen in the mine for years past—in fact, I have not seen such in the county before. Capt. Browning informed me that the mine was almost at a stand at present, but will shortly be worked with great spirit. Should this be the case, it is my opinion, judging from what I saw, that the adventurers will reap ample reward. To the east of East Birch Tor there is another mine opening by a company of Bristol gentlemen, under the name of Devon Great Tincroft. Here a shaft is sunk on one of East Birch Tor lodes to the depth of 20 feet, and some good tinstuff taken up; the lode is 18 in. wide, and worth 6s. per fm.; but, in consequence of the water, they were obliged to stop sinking the shaft, and are bringing up an adit level, which will come in under the shaft 90 feet deep. Should the lode hold down good to this depth they will have a quantity of ground to be taken away upon tribute, and will be able to make a return upon a small outlay. They will also be able, by a cross-cut from this adit level, to intersect eight other lodes at 90 ft. deep from surface; and should these lodes be found good going east, every fathom will be still giving a greater back, and no steam nor water power will be required to drain the mine. Such advantages as these can be but seldom met with to work so many lodes. JOHN PENROSE.

Chagford, Devon, July 24.

WHEEL OAK—WHEEL ENNIS.

SIR.—I am aware of your desire to furnish any information relative to mining, and being an adventurer in Wheel Oak and Wheel Ennis Mines, situate in Wendron, Cornwall, both under the same management, which I am happy to say is highly respectable, I cannot help expressing my surprise at reports of both mines not appearing in your Journal. Some weeks since I was pleased at reading a notice of the former, and regret communications are not sent (say monthly) for the satisfaction and information of shareholders who, like myself, reside at too great a distance to see the weekly reports which are furnished to the purser, at Falmouth; and I hope he will see the propriety, in future, of adopting this suggestion.—HENRY ROWE: Exeter, July 24.

[We shall have pleasure in publishing any authenticated reports which may be furnished us for that purpose. Indeed, we are repeatedly urging on pursers and others the importance of forwarding us reports and other particulars of undertakings in which they may be interested, not only for the information of adventurers, but for the guidance of parties intending to become shareholders. Corrections for our share list are also at all times most acceptable.]

WHEEL ROBINS.—In consequence of demands on this mine, and proceedings at law being threatened, a meeting is called, to be held at Webb's Hotel, Linkard, on Wednesday, the 8th of August next, at 3 o'clock in the afternoon, to consider and adopt measures for discharging liabilities, and for winding-up the affairs of the company.

LAKE SUPERIOR COPPER REGION.—By information from the United States, we learn that the shipment of copper for the season has actively commenced. Several vessels have landed valuable cargoes of provisions, and re-shipped copper, taken almost in a state of purity from the earth, at a depth of from 40 to 60 feet. Boulders of iron ore are found so rich, as to require only remelting and casting to be ready for manufacture, and are superior to the famous iron mountain of Missouri. A company from Michigan is now at work, making it into blooms and shipping it for market. The Pittsburgh Copper Company has now 150 men employed at its works at Eagle River—4 officers and 146 miners and labourers. Its buildings form quite a little village of 25 houses, with 300 inhabitants, having its clergyman, doctor, and schoolmaster. The company has also works at Pittsburgh, for smelting and refining its masses of native copper, turning out 20 tons of ingot copper per week. The company has invested a capital of \$120,000 in explorations, locating its tract, paying for its land—over 5000 acres, at \$2½ per acre—in opening its vein, steam-engine, stamp-works, &c. It made its first dividend last winter—\$10 per share, or 50 per cent. on the entire investment. It brought about 800 tons of crude copper to market last year, and expects to do nearly as well hereafter.

ACCIDENTS.

Darley Main Colliery again.—On Tuesday morning, about eight o'clock, an ignition of the fire-damp took place, which caused the workpeople to be so much alarmed, that they left their work; but, happily, the gas was not in such a body as to cause an explosion. Although no damage was done, much alarm was exhibited in Barnsley by the relatives and friends of those employed in that pit.

Flint.—At the corner's inquest, held on the bodies of the eight victims by the rope breaking at Messrs. Eytton's Colliery, a verdict of "manslaughter" was found against David Hughes, the man who had the charge of the engine at the time of the accident, and by whose carelessness it happened. The usual signal for coal to be drawn up is three knocks with a hammer, and a fourth distinct blow when men are to be raised. It is supposed Hughes had misunderstood the signal, as he was generally considered a careful man; but was not the regular engineer. He tried, when too late, to stop the engine, but without success.

Wordsley, Staffordshire.—J. Fox (13 years) died from burns received by an explosion of fire-damp in the colliery of Messrs. Oakes and Jones, at Standhill, after lingering from the 26th June last.

Bilston.—D. Pitchford (13 years) fell a victim to the shameful practice of leaving old coal and other shafts totally unprotected; he was flying his kite, and walked backwards into it. We are happy to find one of the jurymen had the independence to stand out for a verdict of manslaughter against the owner of the pit.

West Bromwich.—As some colliers were descending to their work at the Queen Pit, belonging to J. Tildersley, Esq., they heard a loud crash, and, on reaching the bottom, found an immense mass of coal, 10 yards thick, had fallen, and blocked up the workings. One man was missing, but after some hours labour he was rescued, unhurt.

Waterhampton.—T. Francis, while engaged driving a horse and skip in a stone pit at Priestfield, was killed, through being jammed against the side of the gate road, by the horse suddenly starting off.

Pen-y-darren.—T. Williams was killed by falling down a shaft at the Race Las Pit.

Merthyr.—W. Thomas was killed by a fall of earth.

Leds.—J. Keighley and W. Charlesworth entered the Waterloo Pit, at Thorp Hall, with a naked candle, in direct opposition, it is said, to the continually expressed desire of the owners and the viewers, when the consequence was an explosion of fire-damp, by which both men lost their lives.

Darham.—G. Hall fell down the Thornley Pit at the Hutton seam, and was killed.—Thomas Hall fell from consumption, brought on by being injured from a fall of roof in Trindon Colliery.

The late Fatal Accident on the Tamar.—We are glad to learn that, at a late meeting of the committee of the Humane Society of Plymouth, it was agreed to award two sovereigns and a bronze medal to Thomas Carme, the Cornish miner, who, some weeks ago, so nobly succeeded in saving the lives of nine persons out of the 15, who were overturned in crossing the Tamar, near Wheel Maria Mine.

NEW SMELTING ESTABLISHMENT IN WALES.

A smelting establishment is spoken of, to be established at Dinas Mowddwy, in connection with the mining companies in that locality, of which the principal are the Pennant and Craigwen Consolidated, the Cowarob, Foel Rhudd, &c. This is to be effected by those identified with the mines, and not as a separate association for smelting apart from mining, so that the real producers of the ore will reap the fair and legitimate advantages of their labour, instead of receiving an inadequate price for the mineral, and leaving the smelter the lion's share for converting it into metal. The following estimate has been made within a few months, from actual examination of the Craigwen ores—namely:

1715 lbs. Lead	£12 5 0
24 lbs. Silver	8 2 0
5204 lbs. Sulphur	6 15 0
2240 lbs.	£27 2 0
Ore dressed	£14 0 0
Smelting	3 0 0—17 0 0
Smelting profits	£10 2 0
Market value	£14 0 0
Mining cost and royalties	8 0 0
Mining profits	£ 5 0 0
Add smelting profits	10 2 0
.....	£16 2 0
Deduct interest for plant	0 10 0
Total profits per ton of ore	£15 12 0

These facts show how the exertions of the miner have been made subservient to the smelter.

FOREIGN INTELLIGENCE.

CALIFORNIA.—We have been favoured with the following translation of extracts from letters from California, published on the 5th June last in the *Zacateno*, a Mexican newspaper:—"It is impossible to describe the labour and misery suffered by those who go to the 'placers.' From Stockton the passage of each person costs \$30, and for every 100 lbs. of luggage he carries he pays \$6. In Stockton, he who has no waggons pays for freight to the 'placer' of Estanislao 6 rs. (3s.) per lb., the distance being 25 leagues. If he embarks for the Sacramento, the passage to Sutter's Fort costs \$35, and \$14 per 100 lbs. of luggage, and from thence to the 'placers' 8 rs. per lb., enormous for men who have arrived in parties of 40 and 60, and with provisions for six months. Those who go by land, in order to avoid these heavy expenses, purchase bad waggons for \$500 or \$600, and yokes of oxen for \$200 and \$250, and each wagon requires three yokes; but they get disheartened, as after all they themselves have to go on foot, because for horses worth \$14, the people of the country demand \$150 and \$200. From Yerba-buena, or Puerto, of San Francisco, the 'placers' are distant 30 leagues; the whole of the road (after passing the Rancho of Las Positas) without any resting-place but the ground, with the risk of losing the lives of men and animals, there being immense sandy plains, without water or pasture, and many animals are drowned in attempting to pass the rivers of San Joaquin and Estanislao. The 'placers' are at the foot of the snowy mountains which run to the north-west and north-east. Nobody can form an idea without visiting them, of the immense labour which it costs to extract the gold; it may be safely asserted, that of a hundred men, two of them do not obtain gold enough to repay them for their heavy expenses. Instead of extracting the gold with the ease spoken of (with the point of a knife), excavations are opened of two to three yards in length, and one or more yards in depth, working with bars, and with the water, perhaps, up to the knees, under a fiery sun, which make the after cold more felt. Only strong men, and those accustomed to it, can stand such work; and although there are such, they obtain nothing, because, after all, they are mines, and nobody has extracted what may be considered a fortune. I have seen many parties work and wash an infinite number of bowls of sand, which gave no gold, and the richest I saw washed produced \$12. The accounts from the 'placers' are not very favourable. The quantity of water greatly retards the working, and sickness is prevalent. Thus many, whom ambition has separated from their families and friends, go to misery or death in a strange country, and amongst society (called civilized) which hardly recognises feelings of humanity."

SOUTH AUSTRALIA.—Advices from Adelaide to the 20th April have been received. The official statement of trade for the past year had been issued, and represented the value of imports at 346,137l., while the exports amounted to 465,878l. The value of the produce exported in the last half of the past year was 208,266l., of which there were 9288 tons 15 cwt. of copper ore, valued at 174,849l.; lead ore, 359 tons, valued at 5002l.; copper, 3½ tons, valued at 2152l.; lead, 6½ tons, valued at 1044l. The most important event in the colony, however, was stated to be the successful establishment of the smelting works. The Patent Copper Company's works, on Napier's patent, near Koringa, on the Burra Burra, commenced smelting on the 15th April, and it was intended to continue them at the rate of 800 tons of ore per month. Messrs. Penny and Owen had succeeded most admirably in their copper smelting works at Apuranga. After struggling for a long time with the difficulties which always attend the establishment of anything new, especially in a new colony, these works are said to be now in steady operation—one furnace having been in activity for a week, with results never equalled in any part of the world, and never even contemplated before the discovery patented by these gentlemen. It will be sufficient to say, that in a single operation, and six hours after the furnace is charged, the copper is turned out as tough and as fine as it was ever produced in Swansea, or anywhere else, with the seven processes then in use. We are informed that the first remittance of copper may be expected in town next week. The steam-tug, *Adelaide*, had arrived after a safe passage of 150 days. The peculiar nature of that roadstead will render this tug a most important convenience to the shipping touching at the port of Adelaide, and it is to be hoped, will also prove a profitable investment to the spirited proprietors.

The mining interests were suffering from a scarcity of money (which is still worth 20 per cent.) and, under such circumstances, the market for shares was drooping. Few of the adventures recently commenced were making much progress, but the leading company, the Burra Burra, was prospering, and the quotation for its shares was 170l.; Belvidere 7l., sellers at three months, 6l. buyers; a great drawback to this mine is the want of water—parties on the spot have sunk 150 feet without success. Port Lincoln 5l. sellers, buyers at 4l. 4s.; in North Kapunda shares there have been several transactions at 36s.; Parangas, last sale at 30s. per acre, six months. The chief depressing cause in the Belvidere, Port Lincoln, and Parangas, is the calls, which most of the shareholders are little able to meet. Mount Remarkables, 102. 10s.; Wheel Gwlers, 20l. sellers; Adelaide, 21s. The Princess Royal, 22l. to 25l. Glen Osmond, and Adelaide Mines, have almost altogether ceased working. In the case of the Glen Osmond Mine, we believe the stoppage arises solely from a mistake in the Deed of Settlement, which prevents the sale and transfer of shares; this, of course, cannot be remedied on the spot. The construction of a railway from Adelaide to the port was occupying attention.

The last advices from Portland, contained in the Sydney papers, give a most favourable description of the condition of the crops. There is also in the same journals further news from Swan River. Continuous discoveries of coal in the neighbourhood of King George's Sound, it is remarked, "will, in all probability, assist in recovering to some degree of position this unfortunate place."

LABUAN.—Letters from this island are to 24th May. Regarding the coal mines, it is observed—"Every examination has served to confirm the expectations of their value, with respect to extent, richness of the seams, and facility of working. Competent and disinterested parties remark it will be found that a prize of more value than was at the time dreamed of has fallen into the hands of the Eastern Archipelago Company."—The rainy season had commenced, and had ushered in fever in its most fearful type. Mr. Motley, the company's agent, who had arrived to superintend the working of the coal seam, was seized, and was obliged to be removed for restoration to health.

The Singapore papers reach to the 31st May. With regard to local affairs they give little news of interest. The supply of gutta percha was increasing and some imports of the article had latterly been received from a place called Coli. The last advices from Batavia stated that the new expedition to Bally was progressing slowly, a want of stores and provisions preventing its early departure. An expedition to New Guinea was also, it is said, contemplated, with the view of maintaining Dutch supremacy, and of counteracting the presumed designs of British diplomatists.

The *Jeffersonian Monitor*, of Texas, asserts that gold exists in the Wachita Mountains to an equal extent to that in California; and the Arkansas local journal states that gold has been discovered in that river.

NORTH BRITISH AUSTRALASIAN COMPANY.—We understand that Governor Grey has commenced proceedings, by *scire facias*, to repeal the grant of the whole island of Kawaw to this company.

THE NEW COPPER-WORKS, AT RED JACKET, NEAR BRITON-FERRY.—It affords us much pleasure to state that there are eight furnaces, and other apparatus so far completed, as to be ready to be put into operation for smelting copper (it is expected this day), under the superintendence of Mr. Bankart, the patentee from London. The buildings were erected by our townsman, Mr. Renoden, and his son; they have been visited by many competent judges from the neighbourhood, and have been declared to be executed in a masterly style.—*Cambridge*.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.

Bank Stock, 7 per Cent., 199½	Belgian, 4½ per Cent., —
3 per Cent. Reduced Ann., 93½	Dutch, 2½ per Cent., 51½
3 per Cent. Consols Ann., 93½	Brazilian, 5 per Cent., 85
34 per Cent. Ann., 93½	Chilian, 6 per Cent., 90 4
Long Annuities, 4½	Mexican 5 per Cent., 29½
India Stock, 10½ per Cent., 251 30	Russian, 5 per Cent., 104½
5 per Cent. Consols for Acc. 93½	Spanish, 5 per Cent., 19½
Bancoq. Bills, 1000s., 1¼d. 47 30 pm.	Ditto 5 per Cent., 34½

MINES.—The share market, during the week, has not presented anything approaching to activity; still, on the aggregate, a fair proportion of business may be considered done. The reports from the mines, and our correspondence from the respective mining districts, speak favourably of the improved aspect of the mines and mining interest generally.

Devon Great Consols is represented to maintain her general character of looking well. Transactions in a few shares have been done this week. After payment of the dividend of 6s. per share, declared on the 18th, and announced in our last Journal, there remained in hand a balance of 18,944 19s., consisting of Exchequer Bills, bills for ores sold, and cash at the banker's.

West Providence meeting declared a dividend of 2s. per 250th share; the mine is reported to be looking remarkably well.

East Wheal Rose is represented to have much improved of late, and to continue in a progressing position. South Basset is also stated to be looking remarkably well; buyers are to be found in both mines.

Bedford United shares have been rather in request during the week. The sale of 115 tons of copper ore, last week, gave a profit of about 400l. for the month of June. East and South Tamar are represented to have improved, and business done in both mines.

A great many shares in Treleigh Consols have changed hands, and buyers are still to be found. Inquiries are being made for Treleigh, Tincroft, Tamar Consols, and Mendip Hills.

At Tregordon Silver-Lead Mine, near Wadebridge, a very important discovery has been made. It appears the workings have for some time been on the east wall of the lode; and, in driving a cross-cut west, a course of ore has been cut, worth 15s. per fm.

Shares in the following mines have changed hands this week:—Devon Great Consols, East Wheal Rose, Bedford United, South Basset, South Frances, East Tamar, Treleigh Consols, Trelawny, South Tamar, Tincroft, Tamar Consols, Brewer, Treviskey and Barrier, Lewis, Wellington, Eagair Lili, Herodsfoot, Cwm Erbin, Alfred Consols, Mendip Hills, Tregordon, Condurrow, &c.

In foreign mines, the principal business appears to have been in St. John del Rey, United Mexican, Guadalupe, Asturian, Copiapo, and Australian, although the whole transacted may be considered of rather a limited character.

The adjourned meeting of the East and South Tamar Mines was held at the offices on Thursday, when it was found that all the calls had been paid for the forfeiture, of which the meeting was adjourned to that day. A call of 2s. 6d. per share was deemed necessary for the further prosecution of South Tamar, and made accordingly. The mine is represented to have considerably improved, and that 45 tons of silver-lead ore, it is expected, will be ready for sampling by the middle of next month.

East Godolphin meeting was held on the 20th, when the accounts for four months, up to June, were audited, showing a balance against the adventurers of 3762 11s. 11d., to meet which, and for further workings, a call of 50s. per share was made. A full report of the meeting is given in another column.

The quarterly general meeting of the Pennant and Craigwen Company was held at the office on Thursday last. The report was considered to be satisfactory; it shows that the necessary machinery (the want of which has so much retarded the progress of the undertaking) is now on its way to the mines. It was asserted at the meeting, that the estimated value of ore laid open is 19,000l., and that a considerable supply was ready at surface waiting for the crusher. The balance in the company's hands is 844l., in addition to 1099l. 10s. arrears of calls, and in respect to which it was resolved, that all shares on which such calls are due shall be forfeited, if not paid before the expiration of one month. The machinery has been constructed by Messrs. Taylor, of the Adelphi, at the Rhyl-y-Mwyn Foundry, near Mold.

At the West Downs meeting the accounts showed a balance against the mine of 263l. 4s. 10d. A call of 5s. was made.

At the Caradon Wheal Hooper meeting, the accounts showed a balance in favour of the mine of 204l. 10s. A call of 2l. per share was made.

The report read at the United Mexican meeting gives a clear exposition of the affairs of the company, which are of a highly-promising character, full particulars of which will be found in the report, and some general observations, in another column.

The Copiapo half-yearly meeting was held on Thursday, when the balance-sheet presented showed a credit of upwards of 500l. in favour of the company. The directors' report is very satisfactory, and stating that 1012 tons of copper ore had arrived since the last meeting; 562 tons had been sold, realising 19,14s. per ton, by which a net profit of 2109l. had been made. By the arrival of the *Balgonie* with 450 tons, 950 tons remained at Swansea for sale, whilst the stock of copper ore remaining at Copiapo amounted to 1350 tons. In consequence of a deficiency of miners at the mines, the directors had very laudably chartered a vessel to take out a company of 15 English miners and an agent (with a quantity of necessary materials), for co-operation would be found more valuable than native labourers. The acquisition of a large interest in some valuable silver mines, since the last meeting, have placed the company in a most important and improving position; 1279 marcs of silver, the produce of two mines, were received by the *Tay* on the 3d instant, which have realised 2244l. 11s. 3d., and a further remittance of 2000 marcs is expected by the next mail. The last advices from the mines were of a very gratifying character; exclusive of the flourishing position of the cultivated ground for the men and stock, they have three gold mines, from which returns may be expected very shortly. The present prospects of the company are certainly far more favourable than they have been for many years.

A meeting of the Bolanos shareholders is to take place on Wednesday next, when we trust to see a full attendance, and that the result of the discussion will be a determination on the part of the proprietors to accede to themselves the advantages which the promising indications of the Cerro del Bote Mine hold out. In another column will be found advices from Mexico, received on the 23d inst., which are highly encouraging, as bringing the desirable information that the new steam-engine is quite capable of mastering the water, and that the operations, which had been stopped by the water, can now be prosecuted with vigour, in order to penetrate to the productive part of the mine. There does now appear wanting nothing but the necessary capital required for developing the resources of this promising mine; and we trust the lesson the shareholders have had, in the too hasty sacrifice of the Real del Monte Mines, will urge them to prevent similar ruin in the Bolanos property, which now holds out cheering hopes of an early profitable result.

Referring to the Welsh lead mines, in the City Article of last week, we observed that several mines were "fearfully cramped for the want of a more efficient exchequer to bring them into a position of paying dividends," &c. The reference was not directed towards any particular company, but merely meant to represent generally, that if a greater amount of capital were employed in this great and important mining district, so that adequate machinery could be erected, the returns would be accelerated, and profits divided. Indeed, we know of many most promising mines, both in North and South Wales, which are worked chiefly by private enterprise, whose misfortune it is to have so inadequate a capital that the necessary machinery can only be erected from the profits. Therefore, however gratifying the prospects may be, their progress must be retarded. We give this explanation in consequence of some shareholders in Cwm Erbin, Eagair Lili, &c., having thought the observations referred to those mines—fears quite groundless, as they must know their prospects and financial position are in good repute.

The Alten Mines report for the month of June has been received. The estimated returns for the month is given at 171 tons. The Raipais Mine is represented as improving; in the 20 fm. level, the lode is 6 ft. big, producing 5 tons of ore per fathom. The Old Mine holds out appearances of great promise; the apparent decrease in returns may be attributed to the men being employed on other necessary work. The other mines are in much the same position as last reported, and still holding out a prospect of remunerative returns. The improvements, which are mainly to be attributed to the introduction of the tribute system are such as fully to justify the adoption of that judicious method of working. The estimates for the months of May, June, and July, 1848, were 27 tons of fine copper; while the estimates for the corresponding period this year is 82 tons, being an increase of 5 tons. The returns for the month of April have exceeded the estimates by about 2 tons, and fully corroborate the favourable anticipations which we had previously expressed.

The Bolanos Mines letters are to the 4th June, and were received on the 23d inst. The engine at El Bote Mine had been completed, and the water drained in San Genaro shaft, so as to enable them to commence driving Taylor's cross-cut, which had been extended 1½ vara during the week. Operations had commenced, and preparations making, at the different points from whence ore was, and expected to be, raised. During the last fortnight 182 cars had been extracted, principally from the Compania level east, but which had since failed; still their anticipation of general improvement is reasonable, as they had not reached the ore ground to which they were approaching.

The Australian Mining Company have received advices from the mines to the 7th April, from which it appears that about 780 tons of ore have been raised from the commencement. At Anstey's shaft, the operations in the 40 fathom level, north and south of Goad's winze, continues productive, which has recently improved by a discovery of a coarse ore of rich ore, running on the opposite wall of the lode. In the lode in the 40, north from Harvey's cross-cut, a

NOTICES TO CORRESPONDENTS.

* We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

NOVEL SUSPENSION-BRIDGE OVER THE DEE.—We have been obligingly furnished, by the Editor of the *Liverpool Mercury*, with an engraving of this bridge, which, we regret, the demands on our space this week prevents our publishing.

BREAKING OF ROPE AND CHAINS IN MINES.—P. (Oven Arman) suggests that colliery and mine proprietors, instead of ropes or chains, should apply Clarke and Varley's elastic atmospheric tube. For P.'s information, we may state, that this application is one of the principal features in their patent, and has not been lost sight of.

HORSE-POWER.—It is well known among engineers, that a horse is capable of raising a weight of about 150 lbs. 290 ft. high in a minute, and to continue exertions enabling him to do that for eight hours a day. Multiplying the number of pounds by the height to which they are raised in a minute, 150 x 290 gives 33,000, and the power of a horse is generally expressed by a sum varying from 30,000 to 36,000 lbs. raised 1 ft. high in a minute. Boulton and Watt express it by 33,000 lbs. x 1 foot by 36,000 lbs. x 1 foot. Tredgold, Falconer, and others, by 33,333 lbs. One horse can draw horizontally as much as seven men. In trains of machinery from 1 to 1 1/2 is allowed for friction.

"E. B." (King's College).—Wolfram is a double tungstate of iron and manganese. According to Whistler, it is best analysed by mixing it, in a finely divided state, with two parts of dry chloride of calcium, and fusing in a platinum crucible. The molten mass is treated with water, which dissolves out the chlorides of manganese and iron, and leaves the tungsten in the form of insoluble tungstates of lime.

"A. Z." (Blackheath).—There can be no doubt, if the calls were correctly made, that they can be recovered in the County Courts; or, if preferred, an action can be entered by any merchant who has supplied materials to the mine against the defaulters.

The letter of "E. R. R." on Carbonic Acid Gas Engines, published in our Journal on the 30 June, was extracted from the *Practical Mechanic's Journal* (Glasgow).

Lake Richards (Plymouth).—The strata of gneiss and mica slate constitute the principal metallic deposit in Europe. The principal ores are discovered there, and many are found nowhere else. The transition rocks, and the lower part of the secondary ones, are not so rich, neither do they contain the same variety of ores. But this arrangement, which is presented by Great Britain, Germany, France, Sweden, and Norway, does not form the general law. In South America the gneiss is but little metalliferous, while the superior strata, such as the argillaceous schists, the stenic porphyries, the limestones, which complete the transition series, as also several secondary deposits, include the greater portion of the immense mineral wealth of that region of the globe.

"H. B." (Ponza).—The oldest work extant on dialling mines is, we believe, entitled *Rara Avis in Terris, or the Complete Miner*, written by Mr. Thomas Houghton, and printed in London, 1728.

"A Constant Reader" (Islington).—The proclamation against importing iron wire was promulgated the 7th May, 1829, in the 6th year of the reign of Charles I. The preamble to the proclamation states, that it is better than foreign wire for making cards for wool, and that by that trade many thousands are maintained; that as it can be manufactured much cheaper by foreigners, unless due protection be given to our manufacturers, the trade must decay; therefore, all foreign wire imported into England is to be seized and destroyed.

"S. G." (Maidstone).—Gold has been found in various localities in England. About the year 1688, two gold mines were discovered, one at Pullox Hill, in Bedfordshire, the other at Little Taunton, in Gloucestershire. These were, however, too poor to pay their working charges, and shortly afterwards were abandoned.

"E. R." (We have inquired of the Prussian Consul General, and several German firms, but have been unable to obtain the information required. The reply we received was, that the price of iron in Cologne was in general regulated by the supply in the Hamburg market.

"B. S. B." (Cornhill).—Emery was long regarded as an ore of iron, and was called by *Hans for oxide quartzifera*. It is very abundant in the island of Naxos, at Cape Emert, from whence it is imported in large quantities. It occurs also in the islands of Jersey and Guernsey, at Almseden, in Poland, and in the mountains of the Pyrenees, where it is found in red brown to dark brown; its specific gravity is about 4.000. It is so hard as to scratch quartz, and many precious stones. It consists of—alumina 80, silica 3, iron 4. It is extensively used for grinding metals, glass, &c., for which purpose it is reduced to powders of different degrees, by grinding and elutriation. In this form it is sold under the denomination of flour of emery.

J. Marshall (Aberwick).—The Mining Company of Scotland was established in 1730; it is connected with, or under the management of the directors of, the Smeaton and Life Office. On enquiring, we were informed that it was a strictly private company, which did not wish for publicity.

"A Speculator" (Antwerp).—We are not aware that any capital has been subscribed in England for the formation of the railroad from Christians to Minda. In 1846, Messrs. E. Stephenson and G. Bidder, inspected the proposed line. Mr. John England was subsequently about six months in Norway, in conjunction with several native engineers, employed on the survey. The distance is about 44 miles. A single line was contemplated, the probable cost of which was calculated at \$3,000,000. The greatest portion of the capital was to have been raised in England. We presume, from the unsettled state of the money market, that the projectors have encountered more difficulties than they originally anticipated. It appears that the Norwegians are about to take the matter into their own hands. On the 19th June, a meeting was held at Sorum, at which it was proposed to construct a line from Christians to the Lake Olen, a distance of 12 miles, on the same route. The shares were to be fixed at \$100 each, the subscribers to receive interest at the rate of 4 per cent. per annum, until the line was completed; parties taking from 1 to 5 shares to have one vote; 6 to 15, two; 16 to 30, three; 31 to 50, four; 51 and over, five. The traffic estimates were based on the returns furnished to the Government at the period when the first line was in contemplation. It is proposed, at the same time, to make the Glommen navigable, so as to avail themselves of the advantages to be derived from that river.

"A Subscriber" (Fellow).—We know nothing of the Californian Gold Mining Association; but, from the manner in which it has been brought and continued before the public, should recommend the exercise of particular caution, before having transactions with any of the parties concerned.

"G. B." (Albany).—Spencer's apparatus for the electrolytic process is thus constructed: A cylinder of glass, wood, or glazed earthenware (having a rim at the bottom for retaining the gypsum), is closed at the lower end with a diaphragm, three-fourths of an inch thick. It contains zinc, immersed in a solution of common salt, and is itself surrounded by a solution of sulphate of copper, which contains the body to be coppered. The operation succeeds best when the surface to be coppered is of the same size as the zinc surface, and that of the gypsum greater than either. The zinc is frequently cleaned, and the salt solution occasionally renewed. When the process is continued for some time, the copper solution must likewise be renewed, otherwise the sulphuric acid which is set free, prevents the precipitated copper from assuming a solid consistence, and converts it into a brown red powder; in such a case the copper must be cleaned with very dilute nitric acid. The formation of a layer of copper, one-eighth of an inch thick, takes eight or ten days.

FUMIFER IMPERIAL. "K." (Llandilo).—The address of Mr. A. Gordon, is Fludyer-street, Westminster, who will furnish any additional particulars respecting his invention.

J. Simpson (Leeds).—Potstone, steatite, and soapstone are of the same family. The soapstone of Cornwall is found massive and nearly white, or of a grey colour, sometimes with a tinge of yellow, and mottled with green and purple. When first raised, it may be kneaded like dough, but on exposure loses part of its moisture, and is then translucent on the surface, yielding to the nail, and possessing an unctuous feel. Steatite is found in considerable masses, in beds or veins. The Arabs are said to use it, instead of soap, to soften the skin. And Humboldt states, that the Otomacques, a savage race, inhabiting the banks of the Orinoco, are almost entirely supported, during three months of the year, by eating a species of steatite, which they first slightly bake, and then moisten with water. The whiter varieties are used in the manufacture of porcelain, others are used for filling. Potstone is a coarse indistinctly granular variety of indurated talc, having a greenish grey, or black, green, colour, with a glassy or pearly lustre. It is found at Chibretum, in the Valtellina; at Como, in Italy, and generally speaking, in serpentine countries; in Norway, Sweden, Finland, and Greenland. Its united properties of infusibility, softness, and tenacity, admit of its being readily turned on the lathe. From time immemorial it has been formed into vessels in the Valais and Grisons; and Pliny describes it as being used in this manner in his time. It is extensively employed in Norway and Sweden, for the construction of furnaces and stoves for domestic purposes.

"P. P." (Neath) writes: "Having to put an overshot water-wheel, 30 feet diameter, I shall feel much obliged by your informing me which is the most approved distance to apply the water, and whether it is not desirable to get as great a head of water as possible."—The distance would much depend on the locality where the wheel was to be placed, in most cases, it is desirable to obtain a good head of water.

"Germanicus" (Paddington).—Much as we regret that the discussion on "Copper Sheathing" has arrived at no practical result, "Germanicus" must be aware that we cannot compel any of our correspondents to give such information as may suit their opponents. As the "Rooster Man" has taken no notice of the two letters of "Germanicus," requesting an explanation of the terms "swelling the surplus." We do not think it probable that his third would meet with a better reception. Our object in encouraging discussion, is to elicit truth, and, by a collision of practical and theoretical opinions, benefit science, and diffuse information. We must decline, however, making our columns the arena of discussion, either when the interest of the subject is exhausted, or it descends to petty cavillings on technical phrases.

M. B. (Brighton).—Hausmannite, or anhydrous red oxide of manganese, is not a common mineral; it is found massive and crystallized in four-sided pyramids, which yield to cleavage parallel to their base, which is square. Its colour is iron-black, opaque, very hard, and yields a darkish red, or chestnut brown powder; lustre, imperfectly metallic; on charcoal, in a strong heat, it fuses on the edges; with borax, readily forms a deep violet blue, or almost black, globule; with soda, a green coloured slag. It is insoluble in muriatic acid, but is decomposed by heated sulphuric acid; it is found in veins of porphyry, with other ores of manganese, at Ehrenstock, near Lissa, in Thuringia; at Rilefeld, in the Harz; and at Lebanon, in Pennsylvania. The best crystallized specimens are met with in Framont, in Alsace. It consists of red oxide of manganese, 99.09; oxygen, 0.22; water, 0.43; baryta, 0.11; silica, 0.34.

"H. C." (Greenwich).—The salt mines of Cardona are in Catalonia. The country in which they lie is composed of vast beds of fucilite, which consist of rounded masses of quartz, with angular pieces of siliceous slate, and fragments of clay-slate, united by a basis containing calcareous earth. In the immediate vicinity of the salt mines there are no other rocks than a yellowish grey sandstone, very highly charged with scales of mica. The salt rock is accompanied by clay and sandstone, similar to the Cheshire formation. Limestone is also found near it, but the usual concomitant—gypsum—is wanting, as well as foliated limestone. The country around is mountainous and rugged, but inferior in elevation to the districts between it and the Mediterranean, as well as to those which bound it on the north. Immediately behind Cardona, the mountains ascend with increasing boldness, until they unite with the great chain of the Pyrenees.

"L. T." (Cornhill).—Wandabek is situated in the Holstein territory, about three English miles from Hamburg; there is a good road, and the transport of heavy goods is not expensive. There is a small iron foundry there which delivers tolerable castings, the principal proprietor and manager is an Englishman of the name of Burgess. The coke and iron is purchased in Hamburg and driven there, it is not available for water carriage. The large iron foundry on the Grubbrook has been long dismantled, its site is at present occupied by the gas works.

* The numerous disappointments in procuring back Numbers during the past year induces us to suggest, that subscribers should be careful in filing, or otherwise preserving their papers; and where extra copies are required, that they should be applied for as early as possible.

* We should feel obliged to all persons, captains, or adventurers, to forward particulars of meetings, &c., of the mines with which they may be connected, on the earliest opportunity, that they may be published in the Journal.

* It is particularly requested that all communications may be addressed—

To the Editors,

Mining Journal Office,

25, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL

Railway and Commercial Gazette.

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The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 25, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

In our Number of the 7th inst., we gave a detailed account of the several sales of copper ore in Cornwall for the last quarter, with comparative views of the business of the three preceding quarters of the year which has just terminated, and of the two antecedent years. We now offer to the notice of our readers a corresponding view of the general sales at Swansea, divided into ores strictly foreign, and those the produce of Ireland and Wales.

Our publication of the 20th January of the present year, exhibited the state of the trade in foreign, Irish, and Welsh ores for the quarter ending December 31st, 1848; and, as it is only by reference to the business of former periods that a fair judgment can be formed of the variations in the trade, we will here advert to the account then furnished. Looking first at the state of the foreign ores, we find that the importation of last quarter exceeded that up to Christmas last; the respective numbers being—

In the quarter just terminated.....	11,957 tons
And for the quarter ending at Christmas.....	10,463 "
Showing an excess, last quarter, of.....	1,494 "
The produce, to Midsummer last, was.....	21,162 per cent.
" to Christmas it was.....	21,830 "
Less last quarter, by.....	668 "
Or two-thirds of 1 per cent.	

The computed quantity of fine copper was—

To Midsummer last.....	2,530 tons
To Christmas.....	2,284 "
Excess last quarter.....	246 "

The average price, per ton of ore, was—

To Midsummer last.....	£15 7 5 per ton
To Christmas.....	14 3 3 "
Excess last quarter.....	£ 1 4 2 "

The average value of ore to produce a ton of copper, was—

To Midsummer last.....	£72 12 8
To Christmas.....	64 17 6
Excess last quarter.....	£ 7 15 2

The amount of sales to Midsummer last.....	£183,788 9 0
" to Christmas.....	148,179 13 0
Excess last quarter.....	£35,609 16 0

In all respects, then, the importers of foreign ores have reason to congratulate themselves on the improved aspect of their affairs, since the close of the past year.

The trade in Irish and Welsh ores for the two quarters exhibits so trifling a difference, in quantity, value, or amount, as to call for no special comment. But we may again remark upon the depreciation in the value of Cornish and Devon ores, as compared with foreign, computed by the test of the value of ore to yield a ton of copper, according to the produce and price of each description.

Thus, in the last quarter, the value of foreign ores to produce a ton of copper, was.....	£72 12 8
Whilst that of the Cornish sales was only.....	64 17 10

Showing an advantage, in favour of the foreign, of..... £ 8 4 10

It is admitted that, as the ores sold in Cornwall are subject to a charge for carriage and freight to Swansea, from which foreign ores are exempt, to that extent the difference above shown is explained. But as the average cost of conveyance is not more than 7s. 6d. or 8s. per ton of ore, or, at the utmost, 5l. per ton of copper, the difference between that amount and the above sum of 8l. 4s. 10d. must be accounted for on some other principle, upon which we do not feel it necessary at this moment to enlarge.

ACCOUNT OF THE SALES OF COPPER ORES AT SWANSEA, IN THE QUARTER ENDING JUNE 30, 1849.

Descriptions of Ores sold, and dates of Sales.	Quantity of ore.	Average Produce.	Computed Quantity of Fine Copper.	Average Price of Ores.	Amount of Sales.	Val. of ore to produce 1 ton of Copper.
FOREIGN ORES.						
Sold April.....	51073	15.713	165 12	12 6 5	13,218 4 0	78 8 0
" May.....	13571	15.767	247 14	12 11 4	19,740 14 6	79 13 11
" June.....	28322	15.951	334 2	17 1 4	27,196 16 6	81 8 2
" May.....	10055	16.279	163 12	12 12 9	12,700 16 0	77 12 8
" June.....	20227	16.911	304 19	17 19 9	36,460 15 6	72 4 2
" June.....	71698	20.000	441 9	17 1 2	28,964 5 6	65 12 3
" June.....	3061	21.886	669 19	14 17 4	45,507 12 0	67 18 6
Totals & averages for the quarter.....	11907	21.162	2530 7	15 7 5	183,788 9 0	72 12 8
IRISH AND WELSH ORES.						
Sold April.....	369	10.191	37 6	7 19 11	2,926 16 6	78 9 4
" May.....	9731	11.33	33 1	7 11 0	2,566 17 0	77 13 4
" June.....	3252	9.318	32 16	7 9 8	2,322 19 0	80 9 8
" May.....	631	9.849	61 8	7 12 3	4,757 7 0	77 5 11
" June.....	570	8.907	50 4	5 16 2	3,311 15 6	65 19 6
" June.....	7601	9.938	59 14	6 4 5	5,737 10 6	62 12 1
" June.....	118	9.068	10 14	6 0 0	707 14 0	86 2 10
Totals & averages for the quarter.....	2968	9.607	285 3	6 19 10	30,607 19 6	72 5 5
TOTAL OF ALL SORTS.						
Sold April.....	51442	14.308	205 18	11 4 5	16,145 0 6	78 8 2
" May.....	19111	14.691	360 15	11 13 6	22,307 11 6	79 9 8
" June.....	1874	15.978	336 18	18 14 4	29,826 0 6	81 8 10
" May.....	10368	13.888	225 0	10 14 4	17,428 5 0	77 9 3
" June.....	2597	21.376	253 3	10 17 2	30,772 10 0	71 19 10
" June.....	72299	21.870	501 3	14 4 6	31,701 16 0	65 5 1
" June.....	3179	21.411	650 13	14 10 9	46,315 6 0	67 18 0
Totals & averages for the quarter.....	14925	18.964	2815 10	13 13 11	204,396 8 6	72 11 11
DIFFERENCE FOR QUARTER ENDING MARCH 31, 1849.						
.....	7893	—	—	12 7 9	97,481 5 6	—
DIFFERENCE FOR QUARTER ENDING DEC. 31, 1848.						
.....	13689	18.917	2589 13	12 5 3	167,877 15 0	64 16 6
DIFFERENCE FOR QUARTER ENDING SEPT. 30, 1848.						
.....	12628	—	—	10 12 10	134,390 2 0	—
DIFFERENCE FOR THE YEAR ENDING JUNE 30, 1849.						
.....	69135	—	—	12 5 11	604,145 11 0	—
DIFFERENCE FOR THE YEAR ENDING JUNE 30, 1848.						
.....	50751	17.040	8644 10	12 8 2	629,650 8 0	72 16 8
DIFFERENCE FOR THE YEAR ENDING JUNE 30, 1847.						
.....	53284	16.622	8856 14	12 13 9	676,060 9 6	76 6 7

Throughout the Parliamentary session which is now hastening to a close, nothing has appeared more clearly than the perfect ability of the Government to resist the attacks made upon it as an administration, and to vindicate in all its parts the policy of those public measures which have been submitted to the judgment of the Legis-

lature. In both Houses of Parliament the administration of the colonies in particular has been a subject of sharp and persevering criticism; and though the chiefs who led their little platoons against the strong squares of the Government must have credit for a fair amount of skill and earnestness in their several attacks, they made little or no impression on Parliament within, and less still on the public out of doors. They wanted an actual grievance; they needed a colonial blunder, or a colonial calamity; and failing this kind of ailment, their efforts grew, week after week, more faint and more ineffectual; they were ending the session, leaving all the points upon which the Government stood reasoned out and concluded against them. Instead of weakening, they have inadvertently strengthened the administrative power of the Colonial-office by their incompetent and unsupported assaults. It is to be feared that a great truth has been before their eyes, and speaking to their consciences, at the moment they have been practically denying its existence. The colonies were much at ease, when it was alleged they were suffering greatly; were in a state of great contentment, when it was affirmed they were filled with disturbances.

It is needless to go back over their recent history, agricultural, mining, and commercial, for it is almost universally known that they were, and are, making satisfactory progress in the acquisition of material wealth, and in the organisation of their social and political elements. In the presence of this happy and sustained movement in advance, there are some scores or more of colonial theorists, who would empirically come in with their untested nostrums, and endanger, if they did not permanently impede, the ascending march of our majestic empire beyond the seas. It is no excuse for them that there are defects in the management, and errors in the administration of colonial affairs—in neither kind are the instances so numerous, or of the gravity which they represent. In Great Britain itself there are indications numerous enough of the same species of human infirmity, and ever will be, until the task of public government is undertaken by a ministry of angels. To make the class of incidental and absolutely rare events an occasion for urging the organic re-construction—that is, the breaking up of a successful and vital department of the public service—is to ask what rashness the most intemperate, or ignorance the most presumptuous, could either have conceived or purposed. The advocates of such a change endeavour to charm their festive cups, by crying out over them, *prosperity and good government to the colonies*. Just so. These are in general the elements which at this moment pervade them; and it will be well for the colonies themselves, if the intrigues and invocations which are set on foot at home do not disturb the discipline out of which these benefits have arisen. The qualification of some of these gentlemen for reforming the administration of the colonies is, that they have seen the inside of the Colonial-office; but for certain they have not seen nearly enough, for if they had looked more deeply into the vast and varied duties of the department whose conduct they, in some instances, so imperceptibly criticise, and also into its actual achievements, there can be no doubt that, as men of honour, their complaints would be changed into commendations.

However, as we said, the session is now closing, and the unchecked and unchallenged administration of the colonies will once more revert to the hands of the Colonial Minister. If our little ail was laid out in Australia, or in Caffreland, or if our nightly pillow was in those colonies, we should have the same confidence we now have in the wisdom and beneficence with which the great colonial trust will be administered. Neither the people of England, nor the population of the colonies, can be disposed to put much faith in schemes of Government, which are smooth only on vellum, and symmetrical only on paper. Their theoretical perfection would, probably, turn out to be their practical defect; and in every place men would much rather continue subject to a policy whose defects are known and limited, than submit themselves to the fluctuations of an untried system, which is to conduct them through all the social contingencies of a wide and unbounded future.

We last week addressed a few remarks to the shareholders of the BOLANOS MINING COMPANY, and we now again advert to the subject. A notice of the general meeting, to be held on the 1st August, will be found in another column, and our Mining Correspondence contains a report received from the Cerro del Bote Mines, which is encouraging, inasmuch as it shows that the steam engine just completed is able to master the water, when a communication shall have been effected with the productive parts of the mine. This we take to be a favourable piece of information, as every miner knows the importance of having his mine well under command in respect to drainage. The efficiency of the drainage power being established, we have then to consider the probable value of that which is drained. Now, the Cerro del Bote Mine has already given a large produce, until its workings were stopped by water. The change in the vein, noticed in the more recent reports, although apparently for the worse, is, in reality, considered by the miners of the district as a favourable indication of increased productiveness in depth.

It is, of course, very difficult to make clear to others that which may be perfectly so to ourselves; and, consequently, our advice is that the shareholders should inquire in the proper quarter, attend the meeting to be held on the 1st August, and judge for themselves, whether or no the concern should have the support which we submit it deserves. And we express this opinion disinterestedly, so far as we are individually concerned; but, on the other hand, many of our friends and readers hold a considerable stake in this, as well as other Mexican mines, and we are really desirous to counteract, if possible, that feeling of apathy which would make shipwreck of a large amount of property, and leave, to be hastily abandoned, mines which may be said to be just budding into life.

Apologies to this part of our argument, we have in another column a paragraph, which offers a remarkable commentary on the apathetic spirit which has prevailed for some time past in concerns of this nature. There we learn that the Real del Monte Mines, which, only a few months since, were sold to parties in Mexico for a sum (including liabilities) of about \$130,000, have been made over to a new company, in the same city, at the price or valuation of \$350,000, by which the purchasers from the English company realize a premium of about 40,000l., a clear proof of the estimation in which the mines are held in Mexico. We are not, then, surprised at the vexation of those who struggled to preserve the Real del Monte Company in England, at the same time that we acknowledge that frequent disappointments are calculated to damp the ardour of expectant shareholders; but we trust we may not have to record that the effort to save the Bolanos Company from similar ruin has been made in vain.

In some remarks which we deemed would be interesting to shareholders in the UNITED MEXICAN MINING ASSOCIATION, made in our last Number, we called attention to the sources from whence the association derives their present profit, the certain nature of their returns to, at least, the payment of the debt of the owners, and that of the Mexican Government, to the amount of 3l. 10s. per share; the probable future profits on working their own mines, and reducing the ores of other parties; and the anticipated good results from the recently obtained mines of Promontorio and Aldana. These remarks were the more interesting, as appearing just before the half-yearly meeting, which took place on Wednesday last, a full report of which will be found in another column, the report of the directors read at which, and the discussion which ensued, fully bearing out our observations as to the valuable nature of the property, and the great promise held out of reaping eventually a rich return.

From the fluctuating nature of mining adventures, although, from the state of the funds in hand, it might by no means be prudent to declare a dividend at the moment, we should advise holders certainly not to part with their interest at the price now quoted in the market, being actually less per share than the amount next to certain of payment from the debts due by the owners and Government, independent of the share in the mining property, stores, machinery, &c., and the chance of sharing in the profits of future workings, of which the indications promise so well. The contract between the association and the RAYAS family expires in 1852, when, if the entire debt, now amounting to \$530,000, should not be paid, or a new contract entered into, they will continue to receive 13 1/2 out of the 24 bars, until the full amount of the debt is satisfied. In the meantime, to take every advantage of circumstances for preventing the breaking up of the establishment, the new mines of Promontorio and Aldana will, by that period, probably be in full working order, and in a position to place the association on an entire new footing. The contract under which the new mines are worked is, if they should be successful, all in favour of the adven-

turer, it being expressly understood that no call is to be made for them, and the owners agree to pay three-eighths of any loss which may be incurred. Under these peculiarly favourable circumstances—favourable as anything prospective can well be—we think there needs no apology for again calling attention to the subject, and even repeating some of the observations previously made. It will be highly gratifying to the shareholders to learn, that not only has a commission been appointed to meet the agents of the association for the adoption of means for payment of the debt, but a law has actually passed the Legislature for the reduction of the export and circulation duties, respectively from 6 and 4 to 3½ and 2 per cent. on silver, and from 6 and 4 to 2 and 2 per cent. on gold, which reduction is immediately to come into operation, and by which alone the association will save upwards of 1000*l.* per annum. Altogether the prospects are highly encouraging; and to those who might have contemplated the sacrifice of their shares at an almost merely nominal price, we would say, "hold on to the last; there's a good time coming."

Several attempts have, within the past few years, been made to establish a Miners' Provident Association, or some such institution, for the support, protection, or assistance, of the widows of miners who may be accidentally killed, and the granting allowances to those who may be permanently injured, or prevented for a time from earning their livelihood by any of those casualties to which the miner is peculiarly exposed. We have, in the columns of this Journal, ever exerted to the utmost our humble efforts to advance the success of such an institution; but, unfortunately, from what cause we know not, the proposals, although at first brought prominently before the public, have been fatally nipped in the bud, and the Cornish and Devonshire miners—a class of great importance in the staple produce of our country—unlike every other branch of industry, are left without such a resource on which to fall back in case of need, and which would render calm and placid the dying bed of many an unfortunate father of a family who may meet with an accident terminating fatally, and prevent the survivors from being thrown on the Union workhouses. We are exceedingly glad to find that another attempt is being made to establish an association, under the title of the Miners' Provident Association—the promoters of which are, Mr. PERCIVAL JOHNSON, MESSRS. GILL, RUNDLE, and Co., the bankers of Tavistock, Mr. J. DIAMOND, of Hewton, near Tavistock, Messrs. SKINNER and Son, and Mr. C. V. BRIDGMAN, Tavistock, Mr. GEORGE THOMAS, of the Imperial Brazilian Mining Company, and others.

The prospectus states, "It is proposed to establish a fund to provide for the support and protection of the widows and families of miners killed by accident; and also for themselves, should they be rendered permanently incapable of earning their living from the same cause, and an earnest appeal is now made to all lords, merchants, and adventurers, for their aid and support in founding this most needful association. The miner's occupation is one that constantly exposes him to imminent danger and risk, whereby his life is often suddenly and disastrously terminated, and those who have been depending upon his labour for their support, entirely deprived of their only means of subsistence, and are thereby compelled to become paupers; and it is a notorious fact, that this is the only branch of industry so totally unprovided with charities."

Miners joining the association are to pay 3*d.* per month, and under circumstances of death or accidental injury, themselves or families are to receive 5*s.* per week, or more, as the state of the funds will allow. Rules and regulations will be drawn up by a committee of six, chosen from the principal subscribers and mine agents, which will be duly enrolled. We need hardly say, we heartily wish success to this infant institution, and that our columns are open at all times for its advancement, and rendering it subservient to the welfare of the mining population.

It is gratifying to observe the favourable results of the meetings of the several banking establishments, and other great mercantile undertakings, which we have recorded since the commencement of the present month, nearly all of which have proved profitable investments for capital, and are likely to continue to pay good dividends. Among these we would just call attention to the COMMERCIAL BANK OF LONDON, a report of the annual meeting of which company will be found in another column. It will be seen that, after writing off all bad and doubtful debts, and paying all expenses of the current year, the net profits have been 12,077*l.* 16*s.* 1*d.* After paying a dividend at the rate of 6 per cent. per annum for the half-year ended December last, another dividend, after the same rate, free of income tax, has been declared, and a sum of 2596*l.* 17*s.* 1*d.* carried to the guarantee fund, which now amounts to 20,014*l.* 19*s.* 9*d.* This satisfactory state of affairs may be attributed to the business habits and constant attention of the directors and the executive generally, and to the increased exertions and highly appreciated abilities of the manager.

The half-yearly meetings of the various joint-stock banks being now concluded, we subjoin a table of their relative capitals and extent of business, made up in each case from the accounts last furnished:—

Banks.	Paid-up.	Deposits, &c.	Guaran. Fund.	Div. dec. for half-year.
London and Westminster (established 1834), five branches	£1,000,000	£3,392,857	£105,453	3 per cent.
London Joint-Stock (established 1836), 1 branch	600,000	2,506,891	130,696	*3 per cent.
Union of London (established 1835), 2 branches	422,900	2,836,617	52,743	3 per cent.
London and County (established 1839), 46 branches	199,800	1,354,730	27,550	3 per cent.
1841				
Commercial (established 1840), 1 branch	128,280	541,804	20,015	3 per cent.

* Leaving 15,433*l.* still undivided.

GOVERNMENT ENCOURAGEMENT OF MINING IN CENTRAL AMERICA.—A flaming proclamation was issued by the Government, stating that "an opportunity having luckily arisen which might tend to develop the mineral resources of Central America, decree, &c. &c." The substance of the decree is as follows:—"That every facility and protection should be given to those who dedicated themselves to the exploring and working of mines. That all previous laws, which compelled owners to give a part of their produce to the Government, be annulled. That no duty should be placed by the present or any succeeding Government, on the exportation of any mineral ores in their crude state; a very small duty after having undergone smelting, and the duty greatly reduced upon all mining tools and implements imported. That the proprietors were to be exempt from taxes and forced contributions of any kind, and their horses and mules on no account pressed for the service of the troops or public works. That the men working in the mines were to be exempted from serving the number of days' labour they annually contribute to the Government," &c. Upon the faith and strength of the above decree, mines were explored, good lodes discovered, capital invested, miners engaged, mines opened, and fine rich ore brought to the surface, where, by-the-by, it still remains at grass, and is likely to do so to the end of time. Another proclamation made its appearance a few months after the first, placing a heavy duty on the exportation of crude ores, and at the same time rescinding most of the above-mentioned privileges. Still, under these disadvantages, the works were proceeded with, a quantity of ore was extracted, miners learnt their work, and the appearance of the workmen in the small villages greatly improved. Then appeared a third decree, prohibiting absolutely the exportation of crude ores of any kind, and this under the pretence of encouraging smelting in their own country, at the same time knowing there was neither a reverberatory or blast furnace from one end of it to the other, not a single fire-brick, and not a single person who could build or work any sort of furnace. The decree, at the same time, placed a very heavy duty on the exportation of bar-copper of all degrees of fineness, under the plea that it was wanted in Central America, where there was no person to buy above a few pounds at a time, and that rarely. This last proclamation was the last and final one, for the party abandoned the undertaking, throwing many men out of employ, and leaving the works as a comfortable domicile for wild beasts, snakes, and vampire bats. The above series of contradictory and mischievous decrees is only one instance out of many that are constantly making their appearance, to their own ruin and poverty, and to the detriment of all connected with them.—Byam's Wild Life in the Interior of Central America.

LAUNCH OF AN IRON STEAM-BOAT.—The Swansea Iron Shipbuilding Company, on Saturday last, launched an iron steamer from their yard, in the presence of a large concourse of spectators. She slid from the stocks into the water in splendid style, and was christened the *Augusta*; she will be schooner-rigged, have a screw propeller, and engines of 50-horse power; is the property of Messrs. Schneider and Co., and is intended to ply between Swansea, Loughor, and Ilfracombe. She has a 96 ft. keel, 17 ft. in beam, 10 ft. 6 in. deep, and will carry 200 tons of freight.

PRODUCE OF ENGLISH COPPER MINES.

We have just received the eighteenth number of the valuable compilation, "Gryll's Annual Mining Sheet," from which we give the quantity of Copper Ores sold in Cornwall, for 12 months, from June 30, 1848, to June 30, 1849, together with the Average Price per ton of 21-cwts. in this county and in Wales. We also give the Average Standard, Produce, Price, Number of Tons of Ore, Fine Copper, Amount of Money, and each Company's Purchase, for the past 12 months; together with the quantity of Copper, Tin, Zinc, and Lead, imported into and exported from the United Kingdom, from the 5th January, 1848, to the 5th January, 1849:

Cornwall.	Ore.	Amount.	Price.
Agar, Wheal	31 cwt.	1371	£4741 8 0
Alfred Consols	550	1355 8 0	3 5 6
Andrew, Wheal, and Nangiles	240	974 15 0	4 1 0
Banna, Wheal	73	251 6 0	3 2 0
Barrier	116	449 10 0	3 17 6
Bedford United Mines	1303	7471 18 0	5 14 6
Blackack	105	345 10 0	3 17 6
Brown, Wheal	105	194 15 0	1 17 0
Buckley, Wheal	630	2126 3 6	3 7 6
Busy, Wheal	214	564 3 6	2 7 6
Canborne Vein	2815	11443 14 0	4 0 0
Carn Brea Mines	10137	61099 9 0	6 0 6
Charlestown United Mines	307	3143 10 0	7 0 0
Clifford, Wheal	128	340 19 0	2 13 6
Comfort, Wheal	2518	8873 9 6	2 6 6
Condarrow	1861	6769 1 6	4 6 0
Consolidated Mines	3300	40341 5 6	12 17 0
Craig Braws	1134	4424 16 6	3 18 0
Devon Great Consols, &c.	16673	93544 13 6	5 12 0
Dolcoath	1017	4673 17 0	4 13 0
East Wheal Crofty	1017	14481 8 0	14 0 6
East Pool	1238	4143 9 6	3 7 0
East Wheal Seton	116	483 18 0	4 3 6
Ellen, Wheal	564	3956 6 6	6 16 6
Fowey Consols	6180	34026 4 6	5 10 0
Friendship, Wheal	2609	19606 13 0	7 5 6
Gonamena	26	148 4 0	5 14 0
Graham and St. Aubyn	671	2374 4 0	4 3 0
Great Wheal	132	340 14 0	2 12 0
Gwines Consols	55	328 11 0	5 19 6
Harriet, Wheal	98	283 0 0	2 18 0
Henry, Wheal	199	894 2 6	4 10 0
Holmshush	329	1706 18 6	5 4 0
Jane, Wheal	47	131 3 0	2 16 0
Jewel, Wheal	141	516 11 6	3 13 0
Lanivet Consols	189	390 18 0	2 12 0
Levant	189	922 3 0	5 5 0
Maiden, Wheal	183	577 5 0	3 15 6
Marke Valley	1443	4695 4 0	3 5 0
Mary, Wheal	653	3326 14 0	6 0 6
Mary Consols, Wheal	815	4241 17 0	5 4 0
North Wheal Darlington	38	219 15 0	5 16 6
North Downs	45	144 8 6	3 2 6
North Pool	645	2588 17 0	4 0 6
North Wheal	6796	26281 18 0	4 10 6
Par Consols	7874	46745 11 6	5 18 6
Perran St. George	1197	4891 10 0	4 1 6
Phoenix Mines	178	1310 8 0	7 11 6
Pink, Wheal	368	1718 13 0	4 13 6
Police	780	3264 5 0	4 4 0
Prosper and Friendship, Wheal	189	390 18 0	2 12 0
Prudence, Wheal	89	472 0 0	2 10 0
Rodney, Wheal	89	136 12 6	1 10 6
Seton, Wheal	4968	22490 5 0	4 10 6
Sisters, Wheal	40	125 0 0	3 2 6
South Wheal Bannet	2562	16336 17 0	6 8 0
South Caradon	2929	19173 17 0	6 11 0
South Croft	289	1295 17 0	5 7 6
South Wheal	289	1295 17 0	5 7 6
South Wheal Frances	2003	17834 14 0	8 18 0
South Wheal	1183	5112 7 0	4 6 6
South Tolgus	677	3289 12 0	4 17 0
Sundry small mines	713	2928 8 6	4 2 0
Tincroft	3881	13606 2 6	3 10 0
Ting-Tang Consols	117	174 9 0	2 5 0
Treleigh Consols	1112	6679 17 0	6 0 0
Trevelyan, Wheal	1231	3736 6 0	3 0 6
Trevelyan	2459	12519 4 6	3 12 6
Trevelyan	1082	2728 8 0	2 10 6
Trevelyan	2301	12988 15 6	5 13 0
Trevelyan	3997	14519 1 6	4 0 6
United Mines	11914	43779 9 0	3 13 6
Venture, Wheal	64	107 9 0	3 6 6
Vyrryan, Wheal	125	632 8 0	5 1 0
Wellington Mines	494	3652 13 6	7 8 0
West Wheal Buller	454	3567 2 0	7 17 0
West Caradon	3866	28435 13 6	7 7 0
West Fowey Consols	243	1456 3 0	6 0 6
West Wheal	418	1486 17 6	3 9 0
West Wheal	32	229 17 0	7 8 0
West Wheal Seton	691	3160 9 0	5 5 0
West Wheal Treasury	1250	5823 2 6	4 13 0
West Trevelyan	188	534 1 0	2 17 0
Williams, Wheal	92	350 14 6	3 16 0
Williams's East Downs	41	178 1 6	4 7 0

Particulars of Copper Ores Sold in Cornwall, from June 30, 1848, to June 30, 1849.

Copper ores	144,983 21-cwts.
Fine copper	12,052 tons 17 cwts. 3 qrs. 23 lbs.
Amount of money	£716,517 7 <i>s.</i> 6 <i>d.</i>
Average produce	8 <i>s.</i> and 16 <i>d.</i>
Average standard	£32 11 <i>s.</i> 6 <i>d.</i>
Average price per 21-cwts.	£4 19 <i>s.</i> 0 <i>d.</i>

Particulars of Copper Ores Sold in Wales, from June 30, 1848, to June 30, 1849.

Copper ores	49,135 21-cwts.
Fine copper	9010 tons 15 cwts. 0 qrs. 24 lbs.
Amount of money	£604,245 10 <i>s.</i> 0 <i>d.</i>
Average produce	18 <i>s.</i>
Average standard	£27 6 <i>s.</i> 0 <i>d.</i>
Average price per 21-cwts.	£12 5 <i>s.</i> 6 <i>d.</i>

Totals in Cornwall and Wales.

Copper ores	194,118 21-cwts.
Fine copper	21,063 tons 13 cwts. 0 qrs. 19 lbs.
Amount of money	£1,321,162 17 <i>s.</i> 0 <i>d.</i>

Copper Ores Purchased by the Copper Companies, from June 30, 1848, to June 30, 1849.

Purchasers.	Ore.	Copper.	Money.
Mines Royal Company	10,584	910 15 3	56,329 2 9
English Company	2,084	307 1 3	21,632 11 1
Vivian and Sons	43,953	5064 3 1	317,012 11 0
Freeman and Co.	21,008	1936 17 1	117,355 4 3
Greenall and Co.	30,177	2891 8 2	180,879 16 6
Sims, Williams, and Co.	27,579	2881 2 2	179,380 11 7
Williams and Crown Company	49,309	5768 5 0	362,017 3 5
Schneider and Co.	8,593	1075 18 0	70,781 11 7
Benjamin Smith	901	227 19 3	15,461 4 0

Particulars of Imports and Exports, from January 5, 1848, to January 5, 1849.

Copper ores imported	Tons 50,053
Copper ores exported	321
Fine copper exported	18,816
Tin imported	299
Tin exported	2,214
Zinc imported	15,525
Zinc exported	4,339
Pig and sheet-lead, &c., imported	3,789
Pig and sheet-lead, &c., exported	15,219
Lead ore imported	1,298
Lead ore exported	136

ACCIDENTS FROM BREAKAGE OF ROPES IN SHAFTS.—In consequence of the remarks of a "Newcastle Collier," in our last Number, expressing fears for the lives of the men ascending or descending pits by Messrs. Fourdrinier's safety apparatus from the falling of the heavy chain—perhaps, 100 or more yards—we have been favoured with a communication from George Elliot, Esq., owner of the Usworth Colliery, where the apparatus is at work, in which the following observations occur—a perusal of which will, we think, quiet all fears, or doubts, on the subject, either of a "Newcastle Collier" or others interested in this important subject:—"On the 5th inst. we had, at our Usworth Colliery, one of the 'wire ropes broken at the drum, when the engine was taking its lift of the load from the bottom of the pit, at the depth of about 1000 feet; the total length and weight of the rope fell upon the cage and apparatus attached thereto, without the slightest injury to either the cage, appendages, or guides. It is evident, therefore, had men been in the cage, they would have been unhurt. I may observe, that the total length of the rope was about 200 fathoms, and its weight about 87 cwt.; and the way in which I account for its not injuring the cage is, that the fall of the rope is divided over several seconds of time in its descent, and not possessing the acquired momentum of the same weight in a compact or solid body. The cage top was merely covered with a 3-in. Mamel plank. I may conclude by observing, with regret, the fearful accident, quoted in the same paper, of seven poor fellows being destroyed in Flintshire, by the breaking of the rope, which, doubtless, would not have terminated fatally had Messrs. Fourdrinier's valuable invention been in use there."

COALS FOR THE STEAM NAVY.

We have received the second report on this interesting and important subject, by Sir Henry De la Beche, C.B., F.R.S., and Dr. Lyon Playfair, F.R.S., just presented to both Houses of Parliament. These reports embody the results of a long series of experiments, made at the request of the Lords of the Admiralty, at the laboratory of the Museum of Economic Geology, on a large number of specimens of coal from all parts of the kingdom, and on some foreign coal, on some manufactured fuels, and on coke. The main points of inquiry have been—the evaporative value of the fuel, its mechanical structure, bulk or space occupied in stowage, and the chemical construction of the fuels experimented on. We are informed in the report that each coal was subjected to experiment for three successive days, the draught being differently arranged for each day; by these means it became easy to ascertain when the gases escaping from the coals were most economically consumed. The mean of the three days gives more correctly the average evaporative value in steam vessels, where the exact draught depends in a great measure on circumstances over which the engineer has little control. The coals most liable to be influenced by different adjustments for the admission of air are those which, from their bituminous characters, are most apt to generate a large quantity of gaseous products on the first application of heat, such as those from the Northumberland, Durham, and Lancashire coal-fields; and these, under different areas for the admission of air, vary much more than with the less bituminous kinds of the South Wales field; and in the highly gas-giving coals, as the Cannell coal of Wigan, it was found necessary to admit air behind the bridge, to complete the combustion of the escaping gases. In experiments, to ascertain how far mixtures of anthracite with bituminous coals were likely to prove advantageous in the manufacture of artificial fuel, the apparatus patented by Mr. Warlich, and now used in the dockyards, was placed at their disposal, and the various mixtures were tried under the boiler. It was, however, ascertained that the advantages of these additions was not such as to recommend their adoption. The cementing tar, although partially carbonized by the heat of the coking ovens, was so much more combustible than the dense and difficultly burning anthracite; that the latter remained unconsumed after the combustion of the former, accumulating on the bars in a state of powder, obstructing the draught, or falling through the grate and escaping combustion. The coals on which experiments were made were selected with the greatest care; inquiries were made at the different ports, as to the kind of coal exported for steam purposes, information from steam navigation companies was obtained, and the local character of the fuel ascertained. Circulars were then forwarded to the owners of such coals, explaining the object, and requesting them to furnish two tons for experiment. In most instances they were sent; some, however, did not comply, and it is therefore possible that many more excellent varieties exist in the several coal-fields than are given in Messrs. De la Beche and Playfair's reports. We select from the tables a few of the experiments made, taking the best of each district; the following twelve of which will give an accurate idea of the method adopted of showing their relative values:—

Names of coals.	Space occupied by a ton.	Weight of a cubic foot.	Water evaporated by a lb. of coal.	Water evaporated by a cubic ft.
Wales.	Cubic feet.	Lbs.	Lbs.	Lbs.
Thomas's Merthyr	42-26	53-0	10-16	538-48
Nixon's Merthyr	43-32	51-7	9-96	514-93
Gadley, 9-feet seam	40-87	54-8	9-36	523-88
Neath Abbey	37-77	59-3	9-34	556-23
Lancashire.				
Balcarras Arley	44-35	50-5	8-83	445-91
Blackley Hurst	45-66	48-0	8-81	422-88
Blackbrook Rushy Park	40-50	55-3	8-02	443-50
Laffak Rushy Park	42-58	52-6	7-98	419-74
Newcastle.				
Andrew's House Tanfield	42-99	52-1	9-39	489-21
Newcastle Hartley	44-35	50-5	8-23	416-61
Hedley's Hartley	43-07	52-0	8-16	424-32
Hastings's Hartley	46-18	48-5	7-77	376-84

From this table, the twelve descriptions of coal which we select as a specimen, it will be seen that the South Wales coal-field produces the best steam coal. It will also be seen that the coal, 1 lb. of which evaporates the most water, is not, as a matter of course, the most economical. For instance, 1 lb. of Thomas's Merthyr evaporates 10-16 lbs. of water, but a cubic foot, weighing only 53-0 lbs. evaporates 538-48 lbs.; while the Neath Abbey, although 1 lb. evaporates only 9-36 lbs. of water, a cubic foot weighs 59-3 lbs. and evaporates 556-23 lbs.; consequently, in evaporating powers, in proportion to stowage, it is the most economical. The same calculations can be made with the others. The following are the chemical constituents of these twelve descriptions of coal:—

Name of Coal.	Specific Gravity.	Carbon.	Hydro.	Nitro.	Sulphur.	Oxygen.	Ash.
Thomas's Merthyr	1-30	80-12	4-33	1-00	0-85	2-02	1-68
Nixon's Merthyr	1-31	80-27	4-12	0-63	1-20	2-63	1-25
Gadley, 9-feet seam	1-33	86-18	4-31	1-09	0-87	2-21	5-54
Neath Abbey	1-31	89-04	5-05	1-07	1-60	—	3-55
Lancashire.							
Balcarras Arley	1-26	83-54	5-24	0-94	1-05	5-87	3-29
Blackley Hurst	1-26	82-01	5-55	1-68	1-43	5-26	4-05
Blackbrook Rushy Park	1-27	81-16	5-99	1-35	1-62	7-20	2-68
Laffak Rushy Park	1-35	80-47	5-72	1-27	1-39	8-33	2-82
Newcastle.							
Andrew's House Tanfield	1-26	85-58	5-31	1-36	1-32	4-39	2-14

IMPROVED VENTILATORS.

Abstract of specification of Obed Blake, of the Thames Plate Glass Company, residing at 13, Southampton-street, Strand, for certain improvements in ventilating, or ventilators for or in, ships, vehicles, houses, or other buildings.—Enrolled July, 1849.]

This invention is exemplified by several sheets of drawings attached to the specification, and the following description is given thereof:—Into a suitable framing of wood, strips of glass are securely fixed by marine glue or putty, and disposed at certain distances apart; another frame slides freely within this frame, and is likewise furnished with strips of glass fixed thereto, as before-mentioned, strips of wood being securely fixed to the framing, for the purpose of guiding the sliding frame in its proper course; a portion of the bottom of this sliding frame is formed with a slanting edge, against which a wedge-shaped piece presses, the same being employed for raising and lowering it, for the purpose of covering or uncovering the ventilating spaces between the first above-mentioned strips of glass, which, when uncovered, are in a position to admit air to pass through, but by pushing a handle along a slot in the proper direction, the wedge-shaped piece before-mentioned, to which this handle is fixed, will cause the inner frame to be raised, so that the slips or strips of glass attached thereto will cover the openings or spaces between the strips attached to the outer frame, and thereby prevent the ingress or egress of air through the ventilator. It will appear obvious that by moving the wedge-shaped piece, which may be made to run on wheels sunk in the now rubbing surfaces, if preferred to any extent short of opening or closing the ventilator entirely, that the admission of air through it may be regulated, or, in other words, the spaces, or openings, between the ventilating strips or slips of glass may be contracted to the greatest nicety, springs being provided of greater or less strength, according to the thickness of the strips of glass for assisting the closing of the sliding frame; or this ventilator may be composed of wood, or metal, in which case the apertures required would be cut in the solid, the action in all other respects being the same. Instead of the style, or lower sash-bar, of a window being made solid, as is usually the case, according to my invention I form such part with a number of circular holes, which extend through the entire thickness of the style, and I cover the said holes on one side of the style with a perforated plate of zinc, or coarse wire gauze, and the other, or inner, side of the style I cover with fine wire gauze, upon which I fix a strip of metal or other suitable material, having holes formed therein of corresponding size to those in the style, and placed opposite thereto; and upon this strip of metal I place another and precisely similar strip of metal, which is capable of being slid between guide pieces over the other, so as wholly, or partially, to cover, or uncover, the openings in the style, and in this manner I effect ventilation. The finger plates of a door are to be arranged in a similar manner to that lastly above-mentioned, and may likewise be made separately.

Another ventilator to be applied to ships, steam-boats, or other navigable vessels, or to windows of houses, or other buildings, or in or on vehicles, is thus constructed:—In a casing of metal, or wood, strips or slips of plate or flint glass, the ends whereof have holes formed therein, are placed, into which pins are inserted, such pins being fixed in a system of levers, which are combined together in manner exhibited. The uppermost of these levers is connected to the top movable strip of glass, and the lowermost of these levers to two pieces of metal, which are actuated in the following manner:—Assuming the ventilator to be open, in order to close it wholly, or partially, I employ a right and left-handed screw, which passes through screwed holes, formed in the pieces of metal above-mentioned; and by turning round this screw, by means of a handle fixed thereon, these pieces are caused to approach, or to recede from each other, and the parallel movement thereof is preserved by the rod and levers. Now, when the ventilator is open, the pieces of metal will be in the position exhibited, and by turning round the screw in the proper direction, the pieces of metal will be caused to recede from each other, and thereby effect the bringing together the strips of glass, or closing of the ventilator; a reverse movement of the screw will open the ventilator. It should be observed, that the bottom strip of glass is securely fixed to the casing by putty, or other suitable adhesive substance. The strips or slips of glass intended to be used in these ventilators vary in thickness, according to the description of vessel on board of which such ventilators are placed, or the windows, doors, or other portions of buildings, or vehicles. In ships and steam-boats, thick plate or flint glass, from $\frac{1}{2}$ in. to 1 in. in thickness, according to the size of the ventilators required; while for windows of houses, and other buildings, the ordinary substance of plate or thick sheet glass will be sufficient. Several modifications of this ventilator are described. A telescope ventilator for ships is constructed, by forming in the ship's side a circular hole, to receive the ventilator, which is constructed as follows:—A short hollow cylinder of metal, having a flange at one end thereof, is formed, into which another hollow cylinder of metal fits loosely, one end whereof has a recess formed, into which a glass is securely fixed in any convenient manner; and there is a flange fixed upon the end of the said cylinder, to prevent the ventilator being drawn too far inwards; and the other and opposite end of the said cylinder has a semicircular handle hinged thereto, which, when out of use, shuts close against the cylinder, and follows the same curvature. The cylinder has three oblong openings formed therein, which are furnished with slides, which are capable of being slid in or out at pleasure; pieces of India-rubber, gutta percha, or other suitable elastic material, are fixed to the cylinder in any convenient manner, to prevent the ventilator from rattling or shaking.

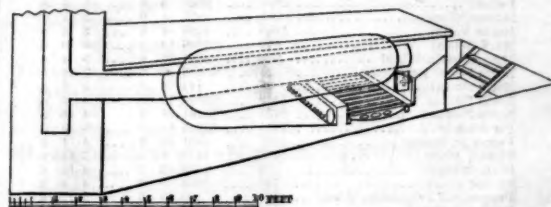
The operation of this ventilator is as follows:—The cylinder being pushed outwards by the handle, a stop being fixed thereto to prevent its being entirely forced out, after which one or other, or all of the slides, may be wholly or partially withdrawn from the openings which they cover, when the ventilator will be in a position to allow the external air to enter the ship's cabin, steerage, or hold, the quantity admitted being regulated by adjusting the slides to the required extent; or, if found more desirable, the openings may be covered with wire gauze, whereby the current of cold air will be infinitely divided—the slides being still employed to regulate the quantity admitted. I would also remark, that the ventilator may be made to slide inwards, instead of outwards, in which case it will only be necessary to place the glass at the opposite end of the cylinder, and to place the slides flush with the outside of the cylinder; and in this manner I form a ventilator, which is particularly applicable to ships. An arrangement is exhibited for the escape of vitiated air and vapours from the inside of railway carriages, and such other vehicles as have lamps placed therein, for the purpose of diffusing artificial light. To an ordinary roof lamp, as the vitiated air in the immediate vicinity of the lamp would become slightly rarefied by virtue of the heat from the flame of the lamp, I propose passing off the vitiated air and vapours in the following manner:—I surround the glass shade by a somewhat similar, but larger, glass, which, instead of being solid, or closed, at the underside, has an opening formed therein, and the said glass is attached to the underside of the carriage, by forming the flange of the larger glass with bayonet slots, or openings; at opposite sides of the said flange, and to the underside of the roof of the carriage studs, are securely fixed the shoulders, or projecting parts whereof, support the glass in its proper position, and enable it to be readily removed and replaced when necessary; and I establish a communication between this glass and the external atmosphere by making the hole in the roof through which the lamp passes sufficiently large to leave a space around the lamp—the same being firmly held therein by springs fixed thereto. By this arrangement, the vitiated air and vapours are caused to pass between the glasses through the hole in the roof, and finally into the open air by the opening; and in this manner I effect more perfect ventilation of vehicles than hitherto.

Having described the nature of the said invention, the patentee desires it to be distinctly understood that he does not claim the exclusive use of any of the separate parts above-mentioned and referred to, except in so far as the same may be employed in combination, and for the purposes thereof. And further, he intends it to be understood that he does not limit or confine himself to the precise details &c., set forth, but claims generally the mechanical combinations and arrangements of parts hereinbefore particularly described, set forth, and represented.

TRIBUTE TO SCIENCE.—Mr. Sturgeon, so well known for his scientific researches, particularly in electricity and magnetism, has been placed on the pension list by Lord J. Russell for 50l. per annum. Mr. Sturgeon is said to be the discoverer of the soft iron electro-magnet; he has done much for the advance of science, and in electricity and its kindred branches he has discovered many new facts, which have been highly appreciated by the most eminent men in Europe. He has also written many elementary works on galvanism, magnetism, &c., conveying sound information, and easy to be understood.

CONSUMPTION OF SMOKE.

In the *Mining Journal* of the 14th inst., we made some prominent remarks on the proceedings, in the House of Commons, relative to a Smoke Regulation Bill, which had emanated in the House of Lords, but which was so vaguely drawn up as to be quite incapable of being passed into a law. Notwithstanding our remarks were somewhat severe on the proposed law, whereby fines would be unjustly imposed, the common informer encouraged, and trade and manufactures most injuriously interfered with, we were perfectly aware that, with a proper mode of construction and with due care, the greater proportion of the black smoke nuisance might be avoided, and the owners of furnaces effect a very great saving in fuel. We have, during the past week, had an opportunity of inspecting an apparatus in operation at the steam-engine furnace of the wire-ropes works of Messrs. Wilkins and Weatherly (licensees of Mr. Andrew Smith), High-street, Wapping, and was erected under the superintendence of the latter gentleman. The plan under notice is on a principle which has been adopted by many engineers, in the endeavour to get rid of the development of "opaque," or black smoke, and render complete the combustion of the carbon and hydro-carbon gases, the distinctive features between them being in the mechanical arrangement of the details. The principle is the admitting atmospheric air in a finely-divided state immediately behind the bridge, where it comes in contact with the gases evolved from a fresh supply of coal laid on the incandescent fuel, in addition to that admitted through the ash pit and bars. Mr. Charles Wye Williams, in his patent, admitted it by perforated plates in the sides of the furnace behind the bridge; Mr. Joseph Williams also a perforated plate, but placed in the ash-pit beneath the furnace, immediately in the rear of the bridge. These are the two patents discussed at such extreme length in the *Mining Journals* of 1843 and 1844. Others have attempted to obtain the same results, by admitting the air in one larger orifice; but this is found to cause an eddy of flame at the spot, instead of carrying equalised heat throughout the length of the boiler, and is very likely to burn out the iron at that point in a comparatively short time. Mr. Andrew Smith admits the air by means of a tube, laid across the furnace, immediately behind the bridge, of a size in proportion to the area of the furnace (in this instance it is about 5 feet), and perforated with holes three-eighths of an inch in diameter, and three-eighths space between each; the ends of the tube being open to apertures in the brick work communicating on each side the boiler with the atmosphere. The following diagram will give a correct idea of the plan:—



The results obtained appeared to be perfect; no smoke could be discovered while the fire was regularly burning, and but a slight rush of thin visible vapour on fresh firing. The additional expense to a furnace, when being constructed, is too trifling to be worthy of notice, being actually only two shillings; and the application to old furnaces, at an expense of only a few shillings, would not only get rid of the nuisance, but very soon more than pay its cost by the great saving in fuel, equal, at least probably, to 25 per cent. The engine at this establishment, of 6-horse power, is kept constantly at work by $2\frac{1}{2}$ cwt. of common slack coal, at from 8s. to 10s. per ton, or 1s. 6d. per day of 12 hours.

ANDREW SMITH'S IMPROVED STEAM GENERATOR.

Fig. 1.

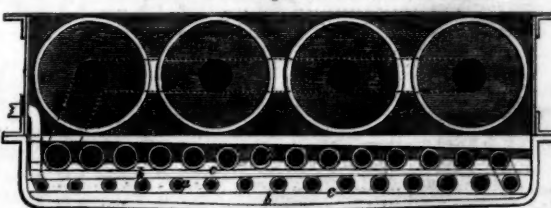
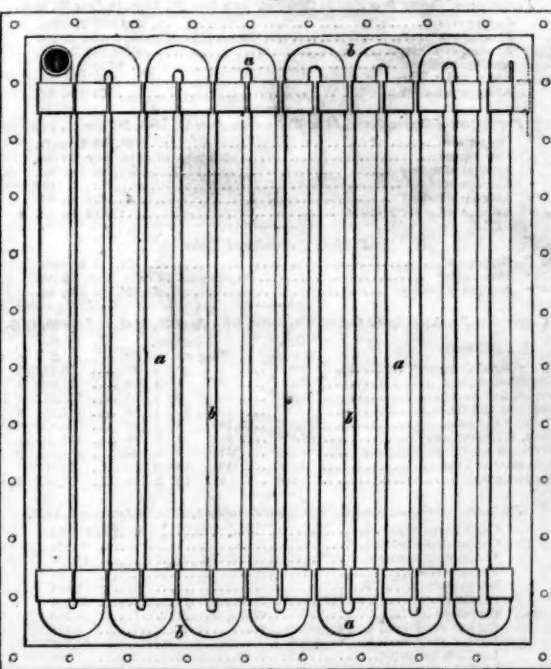


Fig. 2.



"My invention of improvements in apparatus for heating fluids and generating steam, consists in a peculiar arrangement of tubes or pipes, to be used as a continuous water chamber. These tubes or pipes are surrounded on all sides by a bath of fused metal, which, by communicating heat to the water in the tubes, converts it into steam. But, in order that my invention may be more readily understood, I have annexed unto these presents a drawing, in which fig. 1 represents a section, and fig. 2 a plan view of my apparatus; in which fig. 1, *a a a*, are the pipes or tubes forming the water chamber, and surrounded by a metallic bath, *b b b*, coloured blue in the drawing. The pipes or tubes, *a a a*, are supported by rods or plates, *c c c*, which are merely placed between each row of tubes, and not attached to the sides of the apparatus. It may be as well here to observe that the tubes or pipes, *a a a*, are allowed to lie on the supporting rods, *c c c*, perfectly free and unattached to any part of the apparatus, because, if they were fixed in an immovable position, the expansion and contraction to which they are subjected would be liable to destroy the joints; *d d d d*, are steam chambers placed above the water tubes, and are in communication with them, and supplied with steam by means of the short pipe, *e*, shown by dots in fig. 1 of the drawing. It will be seen, by reference to the drawing, that the water chambers gradually increase in size, beginning at the left hand end of the lower row of tubes, that being the place where the water is supplied, until they arrive at the same end of the upper row. I sometimes construct the apparatus with three rows of water tubes or pipes, and in that case I make the lower row, or that at which the water is sup-

plied, all of the same diameter, and the next row above a size larger, and the row above that larger still, so that instead of each separate tube being of an increased diameter, I increase the size of the whole row. I wish it to be understood that I do not confine myself to any precise number of tubes, or rows of tubes, to be used as water chambers, as it is evident that number may be varied according to circumstances. And I do not claim the heating of fluids, or converting water into steam by means of a metallic bath, as that has been done before; but what I claim as my invention is the peculiar arrangement of tubes or pipes as a continuous water chamber, herein set forth and described, such pipes or tubes increasing in diameter separately, or in rows, or series, as they approach the steam chambers."

The great advantages of this steam generator are based on the chemical principle that a bath of fusible metal absorbs heat 32 times quicker than water, the consequence being that the tube, of whatever length, being immersed in molten metals at a temperature of 500° Fah., is kept continually filled with high-pressure steam, constantly available for giving out its power; and the small quantity of water requisite for keeping up the supply is furnished without drawing to scarcely any perceptible extent on the powers of the engine. The saving of expense in fuel is very considerable; but its greatest advantage is in its adaptation for marine purposes, where it would take up only one-twentieth of the space of the present boiler, with a corresponding diminution in the weight, consequently leaving much room for additional goods, stowage, and freight, and in ships, of war, below the water line, and out of the reach of shot.

New Patents.

SPECIFICATIONS ENROLLED DURING THE PAST WEEK.

Specification of patent granted to William Boggett, St. Martin's-lane, Middlesex, manufacturer, for improvements in methods and machinery for obtaining and applying motive power.—1. Mr. Boggett describes and claims two several arrangements for propelling vessels by means of paddles, whereby the paddles are made to enter the water in an angular position, and to act during the most influential part of each revolution, horizontally or in the direct line of the vessel's motion, and whereby also, the paddles are made to act altogether, or two, three, or more of them, at one and the same time, with the greatest useful effect of which each is capable.—2. A method is also described and claimed of restoring to compressed air, when employed as a motive power, the heat of which it has been deprived by such compression, and thereby increasing its expansive force. Mr. Boggett applies to this purpose the heat generated by the slacking of lime with water, or by the mixture of concentrated sulphuric acid with water, or simply that which is evolved from hot water; the compressed air being passed through a cylinder, inside of, or concentric with, one containing the re-heating element.

Specification of patent granted to Edward Slaughter, of Avonside Iron Works, Bristol, engineer, for improvements in marine steam-engines. The following improvements are embodied and claimed in the specification of this patent:—1. Connecting two or more cylinders to the propelling shafts of marine engines, for the purpose of propelling, and combining therewith an engine or engines to work the air-pumps and condensing apparatus.—2. Connecting more than three cylinders to the propeller shaft. The patentee proposes using as many as eight small instead of two large cylinders, and having four cranks upon the propeller shaft.—3. Connecting two cylinders to one steam chest or slide valve casing.—4. Employing annular air-pumps with annular pistons, and sometimes using the internal portion of the annular portion as an air-pump, &c.—5. Arranging the air-pumps so that they make more strokes than the steam cylinder.—6. Employing, in conjunction with an auxiliary steam-engine (for a sailing vessel), a small engine to work the screw propeller, just at the velocity which will not impede the motion of the vessel when under sail, leaving the larger engine unemployed. For this purpose, it is calculated that a six-horse engine would move the propeller where a power of 200 horses was employed in propelling the vessel.

Specification of patent granted to Charles De Burge, Arthur-street West, London, engineer, for improvements in steam engines, in pumps, and in springs, for railway and other purposes. The first of these improvements consists in connecting the piston of beam engines to the beam without the intervention of a parallel motion. This is effected by directly attaching the beam to the piston by means of a knuckle joint, the connecting-rod working inside of a hollow piston-rod. A second improvement relates to pumps. The pump bucket instead of being made tight in the barrel by means of packing, is connected to the barrel by a water-tight sack of India-rubber cloth, which prevents the escape of water between the bucket and the barrel. The valves are composed of a piece of leather, or caoutchouc, which rests upon the upper surface of the bucket, on the top of which there is superimposed a plate of metal, to which a definite range of lift is given by a stop pin, which it moves up and down. A third improvement consists in the application of the sack packing described in reference to the pump, to the construction of a compressed-air buffer spring, to prevent the escape of the compressed air between the cylinder and piston; and in the construction of a buffer spring formed by riveting two sets of springs upon the opposite sides of a plate inserted into the buffer case.

Claims.—The knuckle-joint connection for beam engines.—2. The arrangement described for the construction of pumps and buffer springs.

Specification of patent granted to Charles Henry Paris, of Paris, France, for improvements in preventing the oxidation of iron. The articles to be protected are first cleaned by being dipped in dilute acid, then coated with gum, and dusted over with a powdered compound consisting of 120 parts glass, 204 parts of carbonate of soda, 12 of boracic acid; next subjected to heat of 115° to dry the gum; and when dried introduced into a furnace, and brought to a heat sufficient to melt the glass upon their surface.

Claims.—1. The general arrangements described for coating articles of iron.—2. The application of carbonate of soda for that purpose.

Specification of patent granted to William Henry Barlow, C.E. Derby, for improvements in the construction of permanent ways for railways. The first of these improvements consists in making the rails with a base of such breadth that they shall require no other base than the ballasting. The cross section of one of these rails is somewhat of the form of an obtuse triangle wanting the base; the broad apex in which it terminates at top forming the point of support to the wheels of the carriages. A second improvement consists in adding a thin bar or plate of iron to the side of railway bars or rails, so that it may overlap the junctions of the rails, and be held in its place by the chains. This arrangement is to make good the points of junction of the rails.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

A. F. Rose, gentleman, Greenvalle-place, Glasgow, for a certain improvement or certain improvements in the process or operation of printing, and in the machinery or apparatus employed therein.

J. Holt, Toolmaker, Lancaster, manager of the Water-side Works, for improvements in machinery or apparatus for preparing cotton and other fibrous substances, parts of which improvements are applicable to machinery used in weighing.

J. Woods, Barge-yard Chambers, Bucklebury, for improvements in bleaching certain organic substances, and in the manufacture of certain products therefrom. (Being a communication.)

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Clayton, Shuttleworth, and Co., Stamp End Works, Lincoln, portable corn-mill.

W. Handley, Chandos-street, Strand, soil pan valve.

W. S. Gillett, Woburn-place, Russell-square, diaphragm to be used with microscope.

A. Motte, 9, Southwark-square, Southwark, portmanteau.

M. J. Rumney, Church-terrace, Walworth, brooch protector and pin cap.

B. Bell, Basing-lane, fuse-cutting die.—*Mechanics' Magazine.*

Recipes.

[Continued from the *Mining Journal* of July 14.]

METALS.—Pewter.—An alloy of tin and lead; or of tin, with antimony, bismuth, copper, &c.—Tin 82 parts, lead 18 parts. If a larger proportion of lead than this is present, the pewter will be acted on by even weak acetic acid.

Trifle.—Tin 83 parts, antimony 17 parts.

Plate Pewter.—Tin 100 parts, antimony 8, bismuth 2, and copper 2.

Britannia Metal.—No. 1: of tin, brass, antimony, and bismuth—each an equal quantity.

Britannia Metal.—No. 2: Tin 52 parts, lead 18 parts, antimony 5 parts, brass 5 parts. This forms an excellent alloy for teapots, &c.

Fusible Metal.—No. 1: Bismuth 6 parts, lead 5 parts, tin 3 parts. Fuse together.

No. 2: Lead 3 parts, tin 2 parts, bismuth 5 parts.

No. 3: Bismuth 2 parts, lead 5 parts, tin 3 parts.

No. 4: Bismuth 8 parts, lead 5 parts, tin 3 parts, mercury 1 part. Fuse together.

ARTIFICIAL GEMS.—The artificial imitation of many of the precious stones has been carried to a high degree of perfection. The basis of these artificial gems is a fusible glass, called paste, or strass, which is coloured with different metallic oxides or salts.

Paste, or Strass.—Rock crystal, 6 oz.; red lead, 9 oz.; 3 drams; pearlash, 3 oz.; 180 grains; boracic acid, 180 grains; arsenic, 5 grains. Mix, and fuse in a Hessian crucible keep it fused for 24 hours, then let it gradually cool.

Amethyst.—No. 1: Paste 16 ozs., oxide of manganese 15 to 24 grains, oxide of cobalt 1 gr. Fuse together.

No. 2: Paste, 4608 grains; oxide of manganese, 36 grains; oxide of cobalt, 24 grains; purple of cassius, 1 grain. Fuse together.

Aventurin.—Paste, 300 parts; protoxide of copper, 40 parts; iron scales, 80 parts. Fuse the glass, and after the reduction of the copper let the mixture cool very slowly. The metallic copper will remain diffused through the glass in a crystalline form.

Beryl.—Paste, 3496 grains; glass of antimony, 24 grs.; oxide of cobalt, 1½ gr. Fuse. **Chrysolite.**—Paste, 5 lbs.; calcined peroxide of iron, 3 drachms. Fuse together.

Red Cornelian.—Paste, 3 lbs.; glass of antimony, 1 lb.; calcined peroxide of iron, 2 ozs.; oxide of manganese, 1 drachm. Fuse together.

White Cornelian.—Paste, 3 lbs.; calcined bones, 1 oz.; washed yellow ochre, 2 drachms. Fuse together.

Diamond.—Peroxide of tin, fused at a very high heat.

Garnet.—No. 1: Paste, 5216 grains; acetate of copper, 72 grains; peroxide of iron, 14 grain. Fuse.

No. 2: Paste, 5 ozs.; oxide of copper, 39 grs.; oxide of chrome, 2 grs. Fuse together.

Garnet.—No. 1: Paste, 427 grains; glass of antimony, 210 grains; oxide of antimony, 2 grains. Fuse together.

No. 2: Paste, 512 grains; glass of antimony, 266 grains; purple of cassius, 2 grains; oxide of manganese, 2 grains. Fuse together.

Opal.—No. 1: Paste, 10 lbs.; calcined bones, 1 lb.

No. 2: Paste, 1 oz.; horn silver, 10 grains; calcined bones, 30 grains; magnetic oxide of iron, 3 grains. Fuse together.

Ruby.—No. 1: Paste, 5 ozs.; oxide of manganese, 1 scruple.

No. 2: Paste, 16 ozs.; purple of cassius, 168 grains; peroxide of iron, 168 grains; golden sulphure of antimony, 168 grains; manganese calcined with nitre, 168 grains; rock crystal, 2 ozs. Fuse together.

Sapphirine.—No. 1: Paste, 4608 grs.; oxide of cobalt, 68 grs. Fuse together for 30 hours.

No. 2: Paste, 8 ozs.; oxide of cobalt, 49 grains; oxide of manganese, a few grains. Fuse together.

Topaz.—No. 1: Paste, 540 grains; glass of antimony, 36 grains; purple of cassius, 1 grain. Fuse together.

No. 2: Paste, 3456 grains; peroxide of iron 36 grains. Fuse together.

Original Correspondence.

ON THE MANUFACTURE OF IRON RAILS.

Sir.—The very numerous and loud complaints which we almost daily hear of the inferior quality of the rails that are now being used upon the different railways in this kingdom, and the imputations cast upon the iron-masters on this account, requires from them some notice, as I feel they are not blameable to anything like the extent which is cast upon them. For the honour of the trade to which I belong, I have given the subject considerable attention; and, upon referring to the progress of railways from their commencement, and also the progress of the manufacture of railway bars during the same period, I find there are many palliating circumstances, which very much mitigate the amount of blame thrown upon the members of the iron trade. When railways first commenced, the quality of the rails was considered of first importance. The very best material was used in their manufacture; nothing else was allowed to be used for the rails. The contract for the Leeds and Selby line was taken by Messrs. Walker, of Gospel Oak, who made the rails; they were tied to the use of the best make of pig-iron, the puddled, or No. 1, bar was cut up, piled, and heated in the ball-furnace, shingled into a bloom, and rolled into a good best bar. Then it was cut up again, and rolled into the rail, without any mixture of inferior iron—so that when the rail was finished it really was good best iron. The price paid was for best iron, and the railway company got value received. I have this information upon the testimony of an eminent practical ironmaster, who was called in by the maker to inspect the rails in the progress of their manufacture, so that he might satisfy the parties that the iron used was really what it was sold for—the price, I believe, was 10s. or 20s. per ton above best bars.

What is the case now? Why, the very worst iron that can be made or purchased is now used in the manufacture of railway bars. Hot-blast cinder iron, made into white pigs, is now sought after to be used for this purpose, and the price of railway bars, instead of being 10s. or 20s. per ton more than good best iron, is reduced to as low, and, in some instances, lower than the commonest bar-iron that can be found, either in Staffordshire or Wales—complete trash; and yet some of the purchasers will have you believe they get best iron, while the fact is rails cannot be made of good best iron at less than from two to three pounds per ton above what they are now selling at. It reminds me of orders being sent for gold watch seals, tying the maker to about 9d. or 1s. each. This is just now the case with rails; and the consequence is, they are no sooner laid down than in a few weeks or months they begin to laminate, split, and crush, and are obliged to be taken up and replaced as they are found to give way; and thus the railway is continually endangering the lives of the passengers, besides being a serious expense to the company. Many are now putting the round-topped rail, which puts off the evil day a little; but this destroys the tyres as fast again, and thus increases the loss.

This state of things has been brought about by an unnatural state of the trade. Since the demand for railway iron has become so large, many joint-stock companies have been formed; to make iron some millions of capital have been brought together, and large works built, and put in motion by boards of directors; and these men, knowing nothing about making iron, and having no connection to take their iron, have to force sales by lower prices than are asked by the private ironmaster, working with his own money; and to follow these common destructive, he is obliged to resort to the use of an inferior material, or go to ruin; and thus it has come, in self-defence, instead of using the very best pig-iron that could be made, to using the very worst and cheapest that could be got, and this accounts for the deteriorated quality of the rails. How can this state of things be remedied? Why, buy best iron, and give best iron price for it, and plenty of men can be found to do you justice; best bar-iron is now, at the present reduced price, worth 7d. per ton at the works; no man can put this quality into good rails, to do you and himself justice, at less than 7d. 10s.; and yet I hear of them being sold at 5d. or under—being as low, or lower, than the veriest trash that can be found in the bar-iron market. Now, what folly this is, to suppose you can have gold for the price of silver, good copper for the price of common brass, or good best iron for the price of the veriest rubbish that can be made. To abolish this rotten system, give a fair price to the maker; this will enable him to do you justice, and bind him to uphold the quality of the rails, by exchanging every rail that splits, laminates, or crushes, for five years after they are laid down upon the permanent way. This will put a stop to selling base metal for sterling stuff, and will wind up some of those concerns who are wasting, as fast as possible, the money of those who have been so foolish as to advance it to build castles in the air.—A STAFFORDSHIRE IRONMASTER: *Staffordshire, July 25.*

ANTHRACITE IRON.

Sir.—Your correspondent, "Carbon," in your Journal of the 7th inst., states, "that the small furnace at the Gwendraeth Works had lately produced 102 tons of pig-iron in one week, has since been working very badly." Being interested in the rise of anthracite coal, and as that fuel—"most inferior," according to "Carbon's" account—is the only fuel employed there, I made inquiries as to the truth of his report; and now beg to state, that 418 tons of best quality forge pigs were cast from that small furnace during the month ending the 14th inst.—or, in other words, that the weekly make for the month was 103½, 104, 105, 105½—418 tons, being nearly as much as any two anthracite furnaces have made in one month. *Carmarthen, July 20.* "FIAT JUSTITIA, RUAT CÆLUM."

COPPER SHEATHING.

Sir.—The opinion of "T. H. S." coincides with mine, repeatedly expressed, that mere laboratory experiments will hardly produce satisfactory results for the furnace, even when assisted by private information on the points of doubt or difficulty—such information being often conflicting, or even contradictory. On this account it was that general discussion seemed to me so desirable, of which, however, there appears little prospect; but I will, at "T. H. S.'s" request, send you my system of questions, in the hope that his answers, at least, will be communicated in your columns. The questions refer to Mr. Vivian's description of an epoch in smelting, and embrace the changes of operations and results which have taken place in the process before and since that epoch. They will, therefore, be much clearer, and more concise, if you will first reprint Mr. Vivian's paper, which is not too long, and would be particularly interesting now that such varied efforts are making to improve the process (you will find it in the *Philosophical Magazine*, 1825, vol. 5, p. 113), and it can betray no secrets—being not only repeatedly copied in our own language, but translated, and in the hands of, probably, every mining and metallurgical school in Europe.—J. PRIDEAUX: *July 26.*

[Mr. Vivian's paper shall be published in our next week's Journal.]

QUERIES IN SMELTING.

Sir.—I may, in reply to Chevalier Radlinski, state that I am not aware of the nature of Hornblower's process, but that I have given full information on the smelting of argilliferous galenas in the earlier part of my series of papers on the "Metallurgical Treatment of Ores" published in the *Mining Journal*.—JOHN MITCHELL: *Hawley-road, July 23.*

IMPROVEMENTS IN COPPER SMELTING—ABSTRACT OF SPECIFICATION.

Sir.—Mr. Birkmyre, in his letter of the 19th inst., states the saving in the working of poor ores by the patent in which I am interested is, at least, 5d. per ton of copper. I feel convinced, however, that 10d. is nearer the mark, and, in some cases, even more. In reply to Mr. Campin, I can well aver that it is a difficulty, if not an impossibility, to minutely report a specification from the causes that gentlemen mentions, and in my letter I did not in the least blame him, but merely stated a fact which he himself admits—viz.: that the abstract did not contain full details, and it was by the omission of some of the more important points that the abstract was likely to convey an erroneous idea of the process. The latter portion of Mr. Campin's letter contains a strange protest. When a patentee sees in a public journal an abstract of his specification, and finds it incorrect, it appears to me that he is the only party whose duty it is to call attention to it, and he would be doing a great injustice to himself did he not do so; but in doing this, he does not necessarily throw blame on the reporter, for it is impossible to suppose that any party furnished with imperfect means to accomplish an end, can produce a perfect result. Hence the blame is thrown on the lack of means, and not on the ability of the reporter; but still the evil of the incorrect abstract remains, and it is only the patentee who can correct it. I perfectly agree with the remark in your "Notices to Correspondents," that it is the best plan for the patentee himself to give the necessary information.—JOHN MITCHELL: *Hawley-road, July 23.*

INDIAN COBALT.

Sir.—This ore of cobalt is a subsulphuret of cobalt, and is found in the state of Sypsoore, in the hilly districts of Rajpootana, where it is accompanied by sulphuret of copper, sulphate of copper, and alum, and it is in the working of the copper ore it is found. It has been analysed by J. Middleton, Esq., F.G.S., Principal of the Hon. East India Company's College at Agra. He states "that it is found in the primitive schist in the form of bands and disseminated grains, the colour of which is steel grey, inclining to yellow. The grains appear to be crystallised, and are probably the cube and its derivatives. What is particularly remarkable in this ore is its purity, so far surpassing, in this respect, any that, so far as I am aware, is to be met with anywhere else. The only substance in combination with it, after separation of the matrix, is an iron pyrites, which is, however, but mechanically mixed, and so highly magnetic as to be readily removable by the magnet." The following is the analysis:—Cobalt, 64.64; sulphur, 35.36 = 100.00. This, of course, represents the composition of the perfectly pure mineral; its specific gravity is 5.45. Whilst on the subject of cobalt, I may mention that the method of treating cobalt ores, and the manufacture of smalts, &c., has been already described in your Journal, in the "Metallurgical Treatment of Ores."—JOHN MITCHELL: *Hawley-road, July 23.*

VENTILATION OF MINES.

Sir.—It is so much easier to offer opinions than to sustain them by fair arguments, and to suggest plans than to prove their practicability, that I have some hesitation in giving utterance to my thoughts. There has always appeared to me to be a great defect in the ordinary processes for the ventilation of mines, inasmuch that they have a tendency to promote that which they are ostensibly contrived to prevent. The systems at present employed, whether working mechanically, by means of rarefaction, or by a jet of steam, may all be considered as operating by exhaustion; foul air and gases being drawn out as one part of a mine, causing the ingress of a corresponding quantity of pure air at another; whilst the circulation of the latter is effected by the opening and shutting of trap-doors and contrivances of a like kind.

That the means thus described fail in accomplishing the desired object, is sufficiently attested by the frequency of accidents. Whatever be the causes of these accidents, whether arising from original defects in the ventilating arrangements, from negligence of the workmen, or from a combination of fortuitous circumstances which no foresight can guard against, and no vigilance prevent—certain it is, that in number and extent, as respects the destruction of life, these calamities have lately very greatly increased. So long as the exhausting system of ventilation is pursued, I believe that accidents in mines will be common; increasing both in frequency and in magnitude, in proportion as mining operations are extended. How can it be otherwise? What can more effectually cause the escape of inflammable and other gases from the workings, than a diminution of pressure? The more active the ventilating process, or, in other words, the nearer, as at present constituted, it approaches perfection, the greater is the quantity of gas evolved, the greater the danger in working the mine, and the greater the cost of maintaining it in a workable condition.

Reverse the process—let the ventilation be one of propulsion instead of exhaustion. Force air into a mine, not draw it out, and then there will be not only effective ventilation, but perfect security, comparative comfort, and a greater amount of physical energy, enjoyed by the workmen. Let the density of the atmosphere of a mine be plus instead of minus, as compared with that at the surface of the earth, and there will be no need of Davy's, and, under ordinary circumstances, no risk in using candles. In such a case the quantity of gases evolved would probably not amount to a third part of what it is at present, and the cost of the propulsive process would, therefore, not be so great as might be apprehended. But if it could be shown that it would be more economical than the exhausting process, would that recommend it? Wait a little—let us see if any one will affirm the principle of propulsion?—O. N.: *Black Rock, July 23.*

ON EXPLOSIONS IN COLLIERIES.

Sir.—In consequence of the many lamentable catastrophes which have lately occurred in the collieries of this country, and in the absence of any means hitherto devised to prevent such an enormous destruction of human life, I have been induced, from feelings of humanity, to visit the mining districts in the north of England, for the purpose, if possible, of maturing a plan of my own, upon a principle never yet attempted, and which I have some reason to hope will prove to be the long-desired desideratum. With a view to ameliorate the sufferings of the working miners, as well as to promote the interests of the coalowners themselves, I have ventured to address the Right Hon. the Secretary of State upon this all-important subject, and to whom I have forwarded a scheme, with diagrams, &c. and, as it is desirable that upon the present inquiry instituted by the Government some improvement at least might be suggested, I am anxious, through the medium of your widely-circulated Journal, to give the outline of my proposed remedy, as far as I have yet had time to elucidate my ideas respecting it, and I am fully aware that, by such means of publicity, the most scientific men in England and elsewhere will have an opportunity of judging as to the consistency, or otherwise, of my suggestions; and should they fail, it may give rise to improvement. It appears, by undoubted authority, that carbureted hydrogen is the only inflammable constituent present in the explosive gas of collieries, I will, therefore, at present confine my arguments to this dangerous element, as being most to be feared. In the first place, it is a gas, and it is not until it has accumulated to a certain extent, that it is liable to explode. It is equally certain that, from its extreme lightness and ascendancy, it invariably floats upon the atmospheric air in mines nearest the roof, and is removed with difficulty from the undulations, or "swilleyes," as they are locally called, where it naturally deposits itself; hence the cause of the recent explosion at Hebburn Pit, involving the loss of 33 lives.

There can be no doubt that the greater the distance the air has to travel between its entrance and its exit, the greater it is charged with this deadly enemy; and although this has long been known, the air-course in some mines has been suffered to increase, according to the progress of the work, to the extent of 30 or 40 miles, and even far greater distances, when, in some cases, it is discharged by a division of the same shaft by which it descended. Still no attempts have been made to remedy the evil, beyond trying to increase the current, for the purpose of blowing the various gases throughout the whole distance, when, towards its exit, it becomes so enormously charged with explosive matter, that it cannot in safety be suffered to pass over a further distance. This I hope to remedy, as I am presently engaged, I believe long as the present system of ventilation continues, the best view will be him who can obtain an equalisation of current throughout the mine; this is difficult no doubt—(see the testimony of George Stephenson, Esq., No. 1562; Report dated Sept. 4, 1835, p. 104). He says—"If 600 or 700 horsepowers per minute of atmospheric air sets off on its journey round the workings, perhaps there is not more than one horsepower per minute reaches the distant part of the mine; there are so many stoppages and doors which it has to pass, all of which leak a little." Surely, then, it would be a desirable remedy, if it were possible, to have a current of air, particularly in the most dangerous parts, where "pillar" workings are first commenced, and dangerous goaves formed. This is another desirable point to remedy. Anxious as I really am to make this epistle as short as possible, I must beg to say a few words upon the heavier body—viz.: "carbonic acid gas, or choke-damp"—before I proceed to sketch my remediable ideas. It is too painfully clear, that many thousands of our fellow-creatures have fallen victims to this latter destructive element, after having survived the first attack of an explosion; and, by the frequent repetition of this deadly enemy, it is almost hourly recurring, and sometimes days elapse before it is possible to descend a pit to their rescue or assistance, the ventilation being suddenly cut off throughout the mine—brattices, stoppings, &c., being blown out. This gas at such a time has most to be apprehended; and to show the extent in some mines even before an explosion, I beg to refer to the evidence of George Forrester, Esq., in the same report, p. 193. No. 2614. He says—"Sometimes the pit would get so full of carbonic acid gas, that we had great difficulty in kindling the fire"—(see also the opinion of the Select Committee in their Report, 1835, p. 104).

Being fully borne out by the testimony of very many scientific men, as to the truth of what I have here stated, I will now assume—1. That the carbureted hydrogen is lighter than atmospheric air, and, consequently, driven along the drifts on top of the latter.—2. That carbonic acid is the heavier of the three, and, consequently, slowly propelled along the "thill," or footway.—3. That the atmospheric air of necessity takes the middle course.—4. That whatever quantity of air may be obtained at the downcast shaft, cannot be proportionately carried throughout the whole air course; and, if even this could be accomplished, I verily believe it would only abate, but not remedy, the evil.

My proposition is nearly as follows:—Supposing the current of air in any of the drifts to be passing from north to south, mixed, as it will of necessity be, with a portion of hydrogen and carbon; at the south end of such drift, and facing the draft, I would excavate beyond the present footway, so as to form a cell—the measurement of which to be hereafter determined; the roof to be carried up beyond the level of the top of such draftway—for instance, in the form of an umbrella—and the bottom to be carried below the level of the "thill," like an umbrella inverted. This cell to be divided vertically, if practicable, and bricked up again in front; but an aperture to be left the width of the drift, in a line with the present roof, so as to catch the floating hydrogen riding upon the atmospheric air in its course, and a similar aperture in a line with the "thill" to the well beneath to catch the carbon—both of which by such means will, I apprehend, detach themselves from the pure air, and become lodged in the trap thus prepared for their reception; whilst the atmospheric air thus cleansed, and coming in contact with the walls between the apertures, will pass on to the adjoining drift. I propose that a similar cell be made at the north end of another driftway, in which the current of air is propelled from the south, to catch whatever impurities escaped the first, or become subsequently engendered, and so to repeat these foul air cells wherever needed for a similar purpose. Thus, instead of foul vapours lodging in the present "swilleyes," or undulations, in quantities to produce danger, artificial "swilleyes" should be made for them, by which means the air would become purified, increased in quantity, as I will show, and the danger removed, as no light need ever approach these cells. If, then, these two dangerous elements can be detached at intervals of space, stopped in their course, and safely removed, as I will presently prove, it is quite clear that such portion, at least, as becomes thus entrapped, cannot mingle with other bodies of a similar nature engendered in an adjoining drift, so as to accumulate in quantities to overcharge the atmospheric air, and thereby endanger the lives of the workmen and jeopardise the property. In devising the means of removing these—in fact, all foul air—I candidly anticipate other good results—viz.: an increase of current, and a more equal distribution of it.

In forming these cells, as I have endeavoured to illustrate in the diagram, &c., al-

luded to, the air course should be divided (say) into six parts, or into thirds, east and west of the centre, or main drift, north and south, by placing a seal air cell facing the draft, as nearly as practicable to the main line—for instance, in a "boardway," adjoining the centre line, and now separated by a stopping only, so that it would be accessible from the former by means of a pipe.

These foul air cells to be connected with one main, to be fixed in the side of the centre roadway, in order to guard against damage by the falling in of the roof, or rising of the thill, the branch pipes to the foul air cells to be fitted with stop-cocks similar to gas fittings—so that few or many of them could be acted upon at one time. The upper branch to communicate with the highest point of each cell for the removal of hydrogen and other light bodies; and the lower branch, to the lowest point of the cells, for carbon, &c., either of which dangerous elements, by means of an air-pump, could, I apprehend, be removed at pleasure by the up shaft, without passing the furnace, regulated, as I before said, with stop-cocks. I beg now to call your attention to the fact, that there are numerous powerful engines of this description, which were constructed for the purpose of exhausting the air from the immense tubes upon atmospheric railways, now abandoned, which might be usefully worked for this purpose.

One engine, employed at Friar's Goose Pit, near Gateshead, for pumping water, expels the enormous quantity of 1170 gallons per minute, or 1,444,800 gallons per day; therefore, if an air-pump were to act similarly, the current of pure air at the downcast shaft would be increased accordingly—thus accomplishing all that has hitherto been attempted, with this important addition, that with fittings constructed and applied as I suggest, all impurities must be removed before any pure air is taken out.

Having thus far endeavoured to elucidate my ideas, with a view to the prevention of these melancholy events, as regards the lives of the working miners, permit me to extend the nature of the plan which I believe it will tend to benefit proprietors. The Select Committee, in their Report of 1835, and others since, have pointed out the necessity of more shafts, and said that the lengths of air coursing are excessive, giving opportunities for leakage, interruption, and contamination. If, therefore, I have not miscalculated the effects of my suggestions, I believe, amongst other advantages, my plan would tend to obviate the necessity of additional shafts, each costing (say) from 25,000l. to 30,000l., or, perhaps, in some instances, as much as 60,000l.; and I further believe, that a greater per centage of coal could be safely worked.

With these presumed advantages in perspective, I would fearlessly ask them if the first expense of carrying my theory into practice will deter or warrant them in continuing a course of ventilation proved to be defective, and to expose their men and boys to daily and hourly risk of destruction. This being an undertaking in which the most learned and scientific men, not only of the present age, but of past generations, have failed in, I am fully prepared for the most powerful criticisms of your contemporaries and others for daring to assume, may to aspire, as an individual uneducated in mining matters, to make the improvement as I anticipate; but it is done with due deference to those who possess a more scientific mind than myself; and my answer to all will be, that it is the bounden duty of man to apply his energies in so good a cause, and, if like many others, it should prove a total failure, I shall have the consolation to know that I have been prompted by the dictates of humanity, and I care not for their censure; but if, on the other hand, it should succeed, I may expect the thanks of the present race of miners, accompanied, perhaps, with the prayers of many a widow and fatherless child.

Borough-road, Southwark, July 25.

CHARLES COLWELL.

ON PYROGEN.—No. XIII.

BY JOHN JOSEPH LAKE, ROYAL LABORATORY, GOSPORT.

With respect to induction generally, it is a property of pyrogen that it is too well established by experiment to need support or to be controverted. But there are phenomena for which it does not satisfactorily account—for instance, the positive state of the higher strata of the atmosphere, and the rectangular force that produces the spiral motion of the fluid when passing along a wire—the latter of which it has already been shown cannot be explained on the hypothesis of two fluids (Paper IV., *Mining Journal*, May 5, p. 211). By induction, the walls of a room can maintain the fluid on the surface of a sphere, or cause electrified slips of paper to diverge; but there are no walls round our globe to produce a similar effect upon it, although the heavenly bodies may, and no doubt do, exercise much influence upon the electric state of the earth; yet they cannot do so to the same extent, nor in the same degree, as the walls of a room on a sphere, on account of their great and unequal distances from us. As regards the rectangular force that produces the spiral motion of the fluid along a wire, although the walls of a room might, probably, by induction produce it, as they no doubt exercise an influence upon it, yet when the wire is in an open space, remote from all solid bodies but the ground, the force that prevents the slips of paper from diverging in a similar situation should arrest the spiral motion of the fluid, and by induction cause it to pass along the underside of the wire with a motion parallel to it. This is not, however, the case. If the particles of pyrogen did not exert a repulsive influence upon each other, there could not be such a thing as induction—its very existence being dependent upon that influence. It is owing to this repulsive force that the fluid is expelled from the outer coating of a Leyden jar; and the same property that drives the fluid from the outer coating from the outer coating would be an impossibility but for the existence of this repulsive force between the particles. The development of this law, which causes the particles of the fluid to seek by every means to disperse themselves, accounts for the positive state of the atmosphere in its upper strata. During Prof. Faraday's recent lectures, an experiment was shown, which seems to prove this. When the bundle of strips of paper was suspended in the lecture-room, they were electrified by means of a wire, connected with the prime conductor of the machine; and after "the action of the electrical machine had been continued for some time, the strips continued in a state of repulsion, even when the prime conductor had been completely discharged, the air in the upper part of the room having become charged." The divergence of the strips of paper, of course, arises from the attraction of the ceiling and walls; but the conductor discharging itself, whilst the upper part of the atmosphere of the room remained charged, does not appear to be accounted for in the same way; for the floor and the earth should exercise equal influence with the ceiling and upper part of the building; and as long as the communication between the conductor and paper and upper part of the room, by means of the wire, was preserved, the conductor ought not to have entirely discharged itself; for the same influence that causes the strips of paper to be attracted by the earth, when suspended out of doors, should have caused part of the fluid to remain in the conductor as long, at least, as there was sufficient to preserve the divergence of the strips of paper. The circumstance appears to be accounted for by my theory.

There seems to be a difficulty on the subject of the electric state of the atmosphere that yet requires explanation—namely: why, if the law I have advocated be correct, a thunder cloud does not disperse itself upwards by the repulsive force of the particles, instead of descending; but this, instead of being a real difficulty, is what, according to the known laws of pyrogen, ought to be the case; for when the fluid is confined in a Leyden jar, it does not disperse itself through the glass; but if a communication be made between the coatings by means of a wire, the fluid will instantly disperse itself by the wire, even if the circuit be of great length. In like manner, between the higher strata of the atmosphere and the lower, there is an extensive non-conducting medium of air, which acts as an insulator, like the glass of a jar; and the earth affording a more ready means of conduction to the upper and more rarefied strata by its elevated points, the fluid seeks that course, although the longest; and the vapour particles enveloped by it gather together, forming the well-known thunder cloud; and descending until they come within the striking distance, it discharges itself in the shape of lightning. The earth thus performs a similar part to that of the wire in discharging the jar.

It is not so easy to assign a reason for the origin of the local disturbance that produces the thunder cloud; but perhaps an opinion, which, as far as I am aware, is original, may not be unacceptable. Lightning rarely occurs except after the prevalence of much dry, hot weather. The drought and heat naturally raises the non-conducting properties of the air to the highest degree, and, at the same time, causes an unusual quantity of vapour to ascend into the atmosphere—the vapour, of course, being charged with pyrogen to the same intensity as the body from which it separated. The vapours thus raised during the day, descend to a considerable extent, in the form of dew, during the night, leaving behind in the atmosphere its quantum of fluid. The air at a certain height thus becomes much saturated with fluid; and this finds much difficulty in rising higher, on account of the dryness of the strata above, which acts as just stated, in the same way as the glass of a Leyden jar. The fluid thus collected, causes an inductive influence upon the earth, which at length begins to attract it; and, bringing it down to the level of the clouds, these become charged, and their volume increased by the ascending vapours, which also partake of the surplus fluid in them. In this manner, the clouds go on collecting and descending, until they afford a sufficient means of conduction to allow the fluid to escape to the earth. This idea of the origin of thunder clouds, partially arose from the author having, on several occasions, obtained a side view of a thunderstorm, and in every instance he observed what appeared to be something of the kind taking place; for out of the level of the chief stratum of cloud pillars, as it were, arose which seemed to connect it with the higher strata of the air, and serve the purpose of lightning conductors, to draw off the fluid from them to the clouds below, whence it was discharged to the earth.

* The violence and direction of this force is illustrated by Prof. Grove's experiments, referred to in the *Mining Journal*, March 10, page 112.

† See No. II. of these papers, *Mining Journal*, April 14, page 153.

VALUABLE SILVER-LEAD MINE FOR SALE.—

TO BE SOLD, BY AUCTION, at the Angel Inn, HELSTON, in the county of CORNWALL, on Wednesday, the 22d day of August next, at Three o'clock in the afternoon, all that valuable SILVER-LEAD and COPPER MINE, called

WHEEL ROSE,

in the parish of STITHNEY, in the said county of CORNWALL, together with the MACHINERY, HALVANS, and MATERIALS thereto belonging.

Wheel Rose Mine is held under a lease for 21 years (of which term upwards of 15 years remain unexpired), under 1-18th dues, but no dues are payable to the lessor until all costs and other expenses in and about the working of the said mine, from the commencement, shall have been repaid by the produce thereof to the adventurers.

The set is nearly a mile in length on the course of the lodes, and about half a mile in breadth, and has produced many thousand pounds worth of the richest silver-lead ore, averaging about £20 per ton.

This mine (which affords a good opportunity for the investment of a small capital) is offered to the public, as some of the present adventurers are unable to contribute their proportions of costs towards an extended working of the adventure.

The agents have received instructions to give every information at the mine, and to accompany all parties who may wish to inspect the workings; and for further particulars application may be made to F. J. Hill, Esq., 59, Threadneedle-street, London; or to the pursuer, Mr. Plomer, Helston, Cornwall.—Dated July 23, 1849.

VALUABLE AND EXTENSIVE MINES OF COAL AND IRONSTONE.

TO BE LET, ON LEASE, on most advantageous terms, the COAL and IRONSTONE under a very large tract of land, in the parish of RUABON in the county of DENBIGH, adjoining the Shrewsbury and Chester Railway.

The proprietors of the ESTATES on which the Ponkey and Aberderyn Iron-Works were formerly carried on, have made arrangements TO LET BOTH PROPERTIES TOGETHER, which will give the lessee of them facilities to carry on a lucrative business—very rarely to be met with.

The COALS and IRONSTONE on these ESTATES may be raised at very much less than an average cost, and the quantity produced in them (besides what are under a very large portion of one of them, in which there is no doubt they will be found) is estimated will supply iron-works with materials to make 400 tons of pig-iron weekly for upwards of 30 years, as well as 50,000 tons of the much and justly-celebrated Yard and Wall Bench Coals per annum for sale, for the same period.

Printed particulars of the property, and lithographed plans of the estates, showing the minerals under them, with calculations as to the expense of making iron from them, as compared with that of manufacturing it in Staffordshire, may be had upon application at the office of the Mining Journal, 26, Fleet-street; and at J. Boydell's, 54, Threadneedle-street, London; and at Messrs. Longville and Williams, solicitors, Oswestry.

Oswestry, June 6, 1849.

TO COAL, COPPER, IRON, CHEMICAL, and other MANUFACTURING COMPANIES.

TO BE LET, ON LEASE, for a term of years, as may be agreed on, a most extensive COAL-FIELD, of the first quality; a FARM, of 240 ACRES of GRASS LAND, with a good commodious DWELLING-HOUSE and attached OFFICES, WALLED GARDEN, STABLING for 50 or 60 horses, from 20 to 30 WORKMEN'S COTTAGES and GARDENS, most eligible sites for the erection of Copper, Iron, Chemical, and other Manufactories, situated at Neath Abbey, in the county of Glamorgan, being close to the navigable River Neath, and only 5 miles from Swansea.

Mr. W. Hunter, at Briton Ferry, near Neath, will show the lands and coal.

For particulars apply to Messrs. Adam Murray and Son, surveyors and land agents, 35, Craven-street, Strand, London.

JAMES BOYDELL, LAND, MINE, AND MACHINERY VALUER, AND AGENT.

No. 54, THREADNEEDLE-STREET, LONDON.

Several PATENT RIGHTS, FREEHOLD ESTATES, LEASES of FOUNDRY and ENGINEERING WORKS, FREESTONE QUARRY, and COAL and IRONSTONE MINES. SHARES in a well-known SLATE QUARRY, the PART, or the WHOLE, of a well-established GAS WORK, and STEAM-ENGINES and MACHINERY of all descriptions.

TO ENGINEERS, BUILDERS, AND ARCHITECTS.

JAMES BOYDELL, 54, THREADNEEDLE-STREET, having been a very large manufacturer of machinery and irregular shaped iron, and having accomplished the rolling of some descriptions of the latter, thought by many to have been impracticable, will be happy TO ASSIST any ENGINEERS, SHIPBUILDERS, and ARCHITECTS, in the planning of the details of what IRONWORK they may have occasion for, or bringing to perfection any invention in machinery, as well as procuring such materials for the purpose as they may require.

TREBARVAH MINES, situate in the parish of PERRANTHNOE, in the county of CORNWALL.

Consisting of 2048 shares.

CONDUCTED UPON THE COST-BOOK PRINCIPLE.

The Trebarvah Mines are situated within two miles of Marazion, and the port from whence the produce will be shipped. They are also contiguous to the Great Wheal Septime Mine, which formerly yielded monthly profits of from £1500 to £2000, and for many years was one of the most productive mines in Cornwall. The set is very extensive, being fully a mile in length on the course of the lodes, by half a mile in width, and is held under leases for 21 years, at 1-18th dues.

There are several lodes in this set, two of which only have been worked upon, running parallel to, and being distant about 70 fathoms from each other—the one to the north possessing the usual indications of rich copper lodes found in this district. Large quantities of tin have been already extracted from its back, and recent discoveries justify the conclusion that much more may be obtained at a comparative small outlay. This lode has been intersected at a depth of 32 fathoms from surface by an adit level driven in from the cliff, and extending about 80 fathoms on its course. A shaft has been sunk from surface 10 fathoms below this level, and a level driven east on the course of the lode to meet a winze sunk 17 fathoms below the adit, 30 fathoms east of the said shaft. In the course of these operations the lode from the adit level downwards increased in size and productiveness, and the quality of the ore improved.

The south lode is large and has yielded blende, mundaic, and copper ore, the latter, according to the best mining authorities, will be found to improve both in quantity and quality, a few fathoms only below the present workings, and at a shallower depth west of the present ends, from the ground undergoing an entire change (just previously to the work being suspended), the price for driving having been reduced from 7d. 10s. to 2d. 10s. per fathom, which is, from analogy in the district, highly indicative of the productiveness of the vein.

These lodes, as well as others traversing the set, are intersected by three known slides and a cross-course, at intervals of from 33 to 60 fms.; the beneficial influence of which on mineral deposits is fully established by experience.

Up to August last year the prosecution of the works had incurred an outlay of about 10,000l.; when, notwithstanding that the returns of mineral were fast increasing, and nearly covered the current expenses of the undertaking, it was determined, by the holders who had paid up the calls made upon their respective shares, not to continue working any longer for the benefit of several shareholders who were defaulters to the extent of 1800l. and who would contribute their proportion of the cost towards bringing the mine into paying condition.

It is now arranged to resume operations with efficient machinery, and under a practical management possessing the advantage of experience derived from the actual working of the mine. Upon a careful calculation, it is estimated that a 30-inch cylinder steam-engine will enable the workings to be carried down to a depth of 80 fms. below the adit level; and it is ascertained that copper ore can be raised at the low tribute of 5s. in the 11, as soon as the engine-shaft shall have been sunk to the 20 fms. level.

The capital for these purposes is proposed to be raised by the disposal of 1024 shares at 3l. per share to be paid by instalments as follows:—

10s. ditto ditto 15th October 1849.
10s. ditto ditto 15th December 1849.
10s. ditto ditto 15th February 1850.
10s. ditto ditto 15th April 1850.

upon payment of which the holders will participate in the advantages of the association in the same proportion as the original proprietors.

Applications for shares to be made to the secretary, at the office of the company, and also to Mr. Tredennick's mining offices, Three King-court, Lombard-street, of whom further particulars can be obtained.

INDURATED AND IMPERVIOUS STONE, CHALK, &c.—AGENTS, with capital, are WANTED in all TOWNS to SUPPLY (under British and Foreign Patents) the great demand for HUTCHISONISED MATERIALS—hard as granite, impervious to moisture, vermin, &c.; the cheapest and most durable for all buildings, hydraulic, paving, monumental and decorative work.—The profits are large.

Apply to HUTCHISON & CO., East Temple Chambers, London, or Tanbridge Wells, Kent, stating name, address, and capital at command.

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125, George-street, Edinburgh, May 30, 1849. D. RANKINE, Treasurer.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Bate's West Hartley 14 9—Carr's Hartley 14 9—East Adair's Main 12 6—Hoywell Main 14 9—New Tanfield 12 6—Ord's Redheugh 13—Ravensworth's West Hartley 14—Tansfield Moor 12—Tansfield Moor Bales 12 6—Tansfield 13 9—Walker's Primrose 12 6—Windsor's Pontop 12 6—Wylam 14—Wall's End Acorn Coals 13 3—Brown's Gas 12—Elna Park 15—Heaton 15 6—Wharfedale 15 6—Eden Main 16—Lambton Primrose 16—Bell 18—Bradfield 16 6—Hutton 17 3—Haswell 17 3—Lambton 16 9—Lumley 16—Russell's Heaton 16 9—Stewart's 17 to 17 3—Whitwell 15 9—Hartlepool 17 3—Hough Hall 15 9—South Hartlepool 16—Whitworth 13 6—Adelaide 16—Cowdon Tees 15 6—Seymour Tees 15 9—South Durham 15 6—St. Helen's Tees 14 9—Tees 17—West Hartley 15 9—Anthracite 24—Cowpen Hartley 14 9—Derwent Hartley 14 6—Sidney's Hartley 14 9—Ships at market, 124; solid, 80.

WEDNESDAY.—East Adair's Main 12 6—Ravensworth's West Hartley 14 6—Tansfield Moor 12—Tansfield Moor Bales 12 6—Windsor's Pontop 12 6—Wylam 14—Wall's End Acorn Coals 13 3—Brown's Gas 12—Elna Park 15—Heaton 15 6—Wharfedale 15 6—Eden Main 16—Lambton Primrose 16—Bell 18—Bradfield 16 6—Hutton 17 3—Haswell 17 3—Lambton 16 9—Lumley 16—Russell's Heaton 16 9—Stewart's 17 to 17 3—Whitwell 15 9—Hartlepool 17 3—Hough Hall 15 9—South Hartlepool 16—Whitworth 13 6—Adelaide 16—Cowdon Tees 15 6—Seymour Tees 15 9—South Durham 15 6—St. Helen's Tees 14 9—Tees 17—West Hartley 15 9—Anthracite 24—Cowpen Hartley 14 9—Derwent Hartley 14 6—Sidney's Hartley 14 9—Ships at market, 124; solid, 80.

FRIDAY.—Adair's Main 12 6—New Tanfield 12 6—Ord's Redheugh 13—Tansfield Moor 12—Tansfield Moor Bales 12 6—Windsor's Pontop 12 6—Wylam 14—Wall's End Acorn Coals 13 3—Brown's Gas 12—Elna Park 15—Heaton 15 6—Wharfedale 15 6—Eden Main 16—Lambton Primrose 16—Bell 18—Bradfield 16 6—Hutton 17 3—Haswell 17 3—Lambton 16 9—Lumley 16—Russell's Heaton 16 9—Stewart's 17 to 17 3—Whitwell 15 9—Hartlepool 17 3—Hough Hall 15 9—South Hartlepool 16—Whitworth 13 6—Adelaide 16—Cowdon Tees 15 6—Seymour Tees 15 9—South Durham 15 6—St. Helen's Tees 14 9—Tees 17—West Hartley 15 9—Anthracite 24—Cowpen Hartley 14 9—Derwent Hartley 14 6—Sidney's Hartley 14 9—Ships at market, 124; solid, 80.

CWMBRAIN PATENT IRON REFINERY.—The PROPRIETORS OF IRON FORGES AND MILLS are respectfully INVITED TO MAKE TRIAL OF MR. BLEWITT'S REFINED IRON, OR METAL, PREPARED BY A NEW PATENT PROCESS.

whereby the IRON is completely FREED from the IMPURITIES CONTRACTED in the BLAST-FURNACE, and, by judicious mixtures, rendered applicable to every kind of manufacture. Heretofore, the metal usually sold in the market has been produced from the worst pigs, scraps, and refuse of some particular blast-furnace, or set of furnaces, without any mixture, or any regard to quality, or the purpose for which it might be required. The PATENT METAL is PREPARED ON SYSTEM, and TO ORDER, for any of the following purposes:—

1. For BOILER and TANK-PLATES.
2. For TIN-PLATES, commonly called COKE-PLATES.
3. For STRONG CABLE BOLTS, RIVET, and ANGLE IRON.
4. This COMPOUND PUDDLED, beat under the hammer into a bloom, reheated, and rolled into a 6 or 6½-inch bar, makes TOPS and BOTTOMS for FLANCH and OTHER RAILS, of very superior quality, and attended with less waste than any other kind of iron used for the purpose. It is also well adapted for nail-roads, horse-shoes, and for other ordinary uses of the blacksmith.

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TO COLLIERY PROPRIETORS

Quantity of air passed through a Mine almost unlimited, to the extent of 200,000 cubic feet per minute, if necessary—depending on size of apparatus.

No injury to pumps, tubbing, chains, ropes, or pitwork.

Goaves kept clear.

Not influenced by barometrical and thermometrical changes in the atmosphere, or by wind.

Current of air underventilating.

LICENCES will be GRANTED on application to Mr. WILLIAM PRICE STRUVE, C.E., Swansea.

The ventilator has been erected at the Eaglebush Colliery, near Neath, and is perfectly efficient, and may be viewed on application to the proprietors, Messrs. Penrose and Evans, Neath.

WILLIAM BRUNTON, SEN., C.E., desires to call the attention of COALMASTERS generally, and their AGENTS, to his METHOD of

RAREFACTION FOR THE

VENTILATION OF COLLIERIES.

It is effected by a machine of the most simple and integral character; has no valves or separate moving parts; has no attrition; and all the friction is resolved into a pit pivot, moving in oil. When at rest, offers no impediment to the air ascending from the pit; is liable to no derangement, and very inexpensive. By this apparatus, which is driven by a steam-engine, or water-wheel, any degree of rarefaction necessary to ventilation is rendered certain, regular, and under perfect control, so that the current of air through a colliery may be greatly increased during the night, or any time the pit is not at work, and thereby prevent that stagnant and dangerous state of the air now so prevalent during suspension of work.

This machine also possesses the power whereby the atmosphere of a colliery can, in a quarter of an hour, be subjected to an exhaustion equal to half an inch of mercury; thereby powerfully drawing out the gas from the coal, and from the wastes and goaf ponds, during the absence of fire or light, and consequently, any danger from explosion; it also the power of restoring the equilibrium and clearing the colliery of fire-damp, before the man enter, by a more vigorous and energetic current of fresh air than has hitherto been attainable by the ordinary means of ventilation; and, by the repetition of this process any night the atmosphere of the colliery during the day would be in the same condition, as to effluvia of gas, as if the barometer were rising, when it is well known and attested that the fissures of the colliery absorb rather than discharge gas.

One of these machines has been erected at Gelly Gae Colliery, belonging to Thomas Powell, Esq., of the Gae, near Newport, who, anxiously solicited to diminish, by all practical means, the risk of human life in our collieries, has kindly permitted Mr. Brunton to invite gentlemen to inspect the machine and its capability.

W. Brunton may be professionally consulted as to the above, or any other subject of Mechanical Engineering, wherein he has had long and extensive experience.

Address W. Brunton, Newport, Monmouthshire.

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that they have become SOLE LICENSEES of MR. ANDREW SMITH, for the MANUFACTURE and SALE of his PATENT WIRE ROPE; and having fitted their premises with his very superior improved machinery, have only to assure those who may favour them with their orders, that the same care and attention shall always be bestowed which, they have reason to believe, has secured them such general approval.

LIGHTNING CONDUCTORS, SIGNAL CORD, and SASH LINE, always in stock.

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DAMP AND GASEOUS EXHALATIONS.

SANITARY MEASURES.

ALL MEMBERS OF BOARDS OF HEALTH are especially DIRECTED to the most EFFECTIVE MEANS which they can ADOPT TO PREVENT the injurious and often FATAL EFFECTS upon the HEALTH of the COMMUNITY, arising from exhalations that are produced from moisture, decayed animal matter (as in grave-yards), stagnant water, and collections of refuse, tending to produce a miasmatic state of atmosphere. In situations so affected, the impervious quality of the ASPHALTE of SEYSEL renders it the most perfect PAVEMENT or COVERING that can be relied upon for hermetically closing, and thereby preventing the rising of moisture and escape of noxious vapours. The present extensive application of this material for covering roofs, terraces, and arches, for preventing the percolation of wet, is strong evidence of its effectiveness for the above purposes, which is further confirmed by the following extract from the Report of the Commissioners on the Fine Arts:—

"In 1839, I superintended the construction of a house of three stories on the Pic d'Engelien. The foundation of the building is constantly in water, about 14 inches below the level of the ground floor. The entire horizontal surface of the external and internal walls was covered at the level of the internal ground floor with a layer of SEYSEL ASPHALTE, less than half an inch thick, over which coarse sand was spread.

Since the above date, no trace of damp has shown itself round the walls of the lower story, which are for the most part painted in oil, of a grey tone colour. It is well known that the least moisture produces round spots, darker or lighter, on walls so painted. Yet the pavement of the floor, resting on the soil itself, is only about 2½ in. above the external surface of the soil, and only 19 in., at the utmost, above that of the sheet of water.

The layer of Asphalt having been broken and removed, for the purpose of inserting the sills of two doors, spots indicating the presence of damp have been since remarked at the base of the door-posts."

"This method has been adopted at the new Houses of Parliament.

Seyssel Asphalt Company, Stangate, London. I. FARRELL, Secretary.

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Under the special Patronage of the NOBILITY and GENTRY, the ARMY and NAVY, the CLERGY, the BAR, and the FACULTY.

This Guard Razor is made of the finest tempered steel, imparting a matchless smoothness and keenness to the edge, and the addition of the moveable Guard causes the Razor to glide with safety over the face, removing the beard without cutting the skin.

The simplicity and safety of this invention is so complete, that the Guard Razor can be used by the blind, the short-sighted, the bedridden, and the paralysed, with perfect safety.

Every razor is warranted, and will be exchanged if imperfect.

Printed descriptive particulars sent post free.

Prices.—Best ivory handles per pair, 16s.; black handles, 12s., sent post free for 8d. each extra. A pair, with ivory handles, in Russia box, one guinea, post free 1s. 6d. extra. A single razor, with splendid electro-gilt guard, in roan case, half-a-guinea, post free 8d. extra.

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SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th, 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo, apply at the company's offices, No. 122, Leadenhall-street, London; and 57, High-street, Southampton.

NINTH REPORT of the DIRECTORS of the COMMERCIAL BANK OF LONDON, for the year ending 30th June, 1849.

At an ANNUAL GENERAL MEETING of the shareholders, held at the Banking-house, Lothbury, on Tuesday, the 24th of July, 1849—

DIRECTORS.

JOHN TAYLOR, Esq., Chairman.

THOMAS BARNEWELL, Esq., Deputy-Chairman.

Charles Dickson Archibald, Esq.

William Borsford, Esq., M.P.

William Sprott Boyd, Esq.

John Alfred Chowne, Esq.

William Cooper, Esq.

James Alexander Douglas, Esq.

Charles